Ex dono auctoris amicissimi
de Crom: Mortimer.
1746.

Jo. Toup.

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F. Hulett Sculp.

AN ACCOUNT OF THE LIFE OF Dr *H. Boerhaave.*

277 d 23

AN ACCOUNT OF THE LIFE AND WRITINGS OF *Herman Boerhaave*,

DOCTOR of Philoſophy and Medicine;
PROFESSOR of the Theory, and Practice of Phyſic; and alſo of Botany and Chemiſtry in the UNIVERSITY of *LEYDEN*;
PRESIDENT of the CHIRURGICAL COLLEGE in that CITY;
FELLOW of the ROYAL SOCIETY in *LONDON*, and of the ROYAL ACADEMY at *PARIS*.

In TWO PARTS,

With an APPENDIX.

By *Wm. Burton*, M. D.

The SECOND EDITION.

LONDON:
Printed for HENRY LINTOT,
M.DCC.XLVI.

ADVERTISEMENT.

UPON this Republication, there was no Occaſion to alter more, than the firſt Paragraph of the Preface in Relation to the Period of 1743, *when this Piece was firſt publiſhed, which the Reader is deſired to excuſe upon this Intimation.*

ERRATUM.

Preface page vi. for *conceals* read *concealed.*

TO

Sir *Hans Sloane*, Bart.

LATE

Preſident of the ROYAL SOCIETY, and of the College of Phyſicians, Firſt Phyſician to his MAJESTY, *&c.*

SIR,

HAD this Piece appeared three Years ago with a Name, the Propriety of the Subject, and the Gratitude of the Writer, would have then directed its Addreſs to you; and, ſince the Reception of it has not been diſcouraging, I hope the Offering now will not be unacceptable.

The particular Reſpect which *Boerhaave* could ſcarcely ſuppreſs in mentioning your Name, and your literary Commerce with him, muſt neceſſarily intereſt you in what relates to his Memory; but there is yet a much weightier Conſideration, your Situation in a like Sphere of Deſert and Dignity, accompanied with an Emulation void of Envy: if an inſatiable Thirſt after univerſal Knowledge, with the noble Diſpoſition of communicating it, could entitle a Phyſician to Honour, and to Fame exten-

ſive as our Globe, Who can lay a juſter Claim to them, than yourſelf and *Boerhaave?* Would to God a like publick Spirit had animated the latter, to have bequeathed to publick Uſe that *Muſæum*, which was, by Report, ſoon after his Deceaſe, ſo wretchedly ſquandered.

Beſide your Recommendations in my Profeſſion, when I reflect on the Civility with which you ever received me in common with all inquiſitive Men, and on the inſtructive Pleaſure derived from the View and Reviews of your Magazine of the moſt curious and ineſtimable Rarities, together with your peculiar Talent of explaining the Nature, and diſplaying the Uſes of each Individual in ſuch an infinite Variety, I cannot but wiſh for the Pen of a *Fontenelle* to celebrate your Character in an Eloge not inferior to his for *Boerhaave.*

May you long, very long, enjoy that too ſeldom felt Satisfaction in Retirement, which muſt reſult from the Conſcioũſneſs of your numerous Services both public and private. I am,

Sir,

Your moſt Obedient,

And Obliged

Humble Servant,

Yarmouth, Auguſt 30. 1746.

WILLIAM BURTON.

THE PREFACE.

THE publication of the following sheets, written above two years ago, was at first delayed by the loss of some part of the manuscript, when near half of it had been printed; other accidents, equally unforeseen, prevented their appearance till now, notwithstanding all but two sheets have been worked off this twelvemonth; thus so long an interval escaped, which might otherwise have been improved in enlarging, or rather in embellishing the Narration.

Since the predominant taste of the inquisitive among us inclines so much toward history, it seems strange, that four years

ſhould elapſe from the death of Dr BOERHAAVE, *e'er any* ſeparate *Piece on his Life and Writings appear'd in the language of* that people, *from whom, during a length of time, he received ſingular encouragement, whilſt they in return have been proportionably benefited by his ſkill, and precepts.*

It was not without reaſon expected, that the veneration many in neighbouring countries *retain'd for his memory, would long before have been manifeſted in a* diſtinct volume; *eſpecially, ſince his funeral oration by the learned and reverend profeſſor* SCHULTENS *has ſupplied materials for one.*

Extracts indeed from this oration occur in the Monthly Miſcellanies *of* 1739; *particularly in* Journal des SÇAVANS, Juin; *with ſome additions in* Nouvelle Bibliotheque, Janvier, *tom.* 2, *in the* Gentleman's Magazine *of* January, February, *and* March, *in the ſame year*; *and in* 1741, *an Eloge on Mr* BOERHAAVE *was publiſh'd in the* Bibliotheque Raiſonnée *for the three laſt months, p.* 338.

Nevertheleſs the Enlargements *in the following pages may* juſtify *this undertaking,*

how

how difficult ſoever it be to do ample *juſtice to the ſubject: In our latter part* they *abound; and in the former, the* ſubſtance *of two or three excellent diſſertations is introduced not impertinently, conſidering that it thence appears, how far the* Panegyric *ſo liberally beſtowed upon others in* BOERHAAVE's *Declamations, &c. was truly applicable to Himſelf, and that the real character, and ſentiments of our author are thus repreſented together; Sentiments no leſs inſtructive, and a character not leſs amiable, perhaps, than any of modern date, were not the weight of the one, and the luſtre of the other diminiſhed by the* medium, *which now tranſmits them to the public.*

Yet, ſeeing men of more leiſure and abilities have hitherto declined giving an account *of a* LIFE *ſo exemplary, and of* WRITINGS *ſo valuable,* large enough *to ſatisfy the commendable curioſity of the ſollicitous about them; a fuller, tho' artleſs narrative can hardly prove unacceptable, containing particulars meriting the inſpection of Philoſophers and Divines, as well as Phyſicians: Beſides, a genuine repreſentation of the gradual advances of a worthy mind,*

ſtrug-

ſtruggling in its very youth, and under the loweſt circumſtances, to promote the welfare of mankind equally with its own, muſt, in ſome degree, intereſt every Citizen of the world, every man of generous principles.

Should any particulars however be thought too trivial, even with an indulgence to a perſonal acqæaintance, may they not be tolerated in ſome caſes, as collateral evidence of hiſtorical memoirs? The memoirs *concerning himſelf found in his library after his deceaſe, and* extracts *from ſome letters, are annext as further authorities: The abſtracts of thoſe memoirs are diſtinguiſhable in the account of his Life by the uſual mark of quotations join'd with references to their original in the appendix, where the words inſerted by Mr* SCHULTENS, *or for connection-ſake, are in Italics.*

The appendix is partly *ſupplemental to* BOERHAAVE's Opuſcula, *mentioned p.* 163; *for, to* compleat *them, his laſt paper on* Mercury, *and* Biographical Prefaces, *as well as that to the* Aphrodiſiacus, *ſhould be included, with the* whole *of his* Theſis, *for the* ſcientific part *of it only is republiſhed here;*

here; But moſt of thoſe other pieces may eaſily be procured with the books, to which they are prefixed, and this appendix is rather too large already.

In our catalogue of BOERHAAVE's *Writings no notice is taken of a letter, concerning which the following mention is made in the catalogue of the* Bodleian *library under the name of* HERMAN BOERHAAVE, "Lettre ſur l'Impoſſibilté des Operations Sympathiques. A Rotterdam 1697." * *The aſteriſk affixt denotes, that this letter is not now to be found in that library; but may it not be reaſonably ſuſpected, there never was ſuch an one? And that the above is a miſrepreſentation of this title to a pamphlet in* 12*mo.* "Lettre A. Mr B*** ſur l'Impoſſibilité "des Operations Sympathiq; par M. L*** "Docteur en Medicine. A Rotterd. 1697?" *How ſuch a miſtake could happen, is not ſo much our buſineſs to enquire, as it is to plead for the excuſe of our own inaccuracies; moſt of which, eſpecially defects in the pointings, were owing to a diſtance from the preſs, that prevented a Reviſe of the greater part of the ſheets; but this we hope, is the more pardonable*

able conſidering the judicious obſervations, they contain on Things, *and* Authors; obſervations *made by a perſon of ſuch copious reading, and clear diſcernment claim at leaſt the regard of* Students; *who will probably be induced to unite a due reverence for the ancients with a juſt eſteem for the moderns, upon gaining hence a previous acquaintance with their reſpective merits; while thoſe of the Faculty, if any ſuch there are, ſtrangers to his ſcattered diſſertations here abſtracted, may from this view of their contents be excited to peruſe the originals, which will abundantly recompence their labour.*

But waving all apologies for the diſadvantageous repreſentation *of any of our* author's *works in ſo narrow a compaſs, let it ſuffice, that there are no* willful miſrepreſentations; *and therefore better information, or candid animadverſions from any quarter, will be thankfully accepted by a writer, who conceals his name, for the ſake of learning with leſs difficulty the undiſguiſed ſentiments of the reader; and who, whatever be the fate of this performance, will enjoy the ſatisfaction of having furniſhed*

a

a larger ſtock of materials, *with which ſome* exquiſite artiſt *may hereafter erect a Monument to our Profeſſor no leſs permanent, if poſſible, than his own Productions.*

THE

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Operum genuinorum, Spuriorum, necnon editionum post obitum cum titulis prælectionum publicarum CATALOGUS, *Indici simul hujus Opusculi inserviens.*

ERRATA.

PAGE 4. *line* 11. and Mark, *read* as was lately Mark; *p.* 6, *l. penult*, *r.* cataracts; *p.* 8, *l. ult*, *r.* orat schul; *p.* 11, *l.* 16, *after* or *r.* that They should be; *p.* 14, *l.* 20, *r.* dissections; *p.* 23, *l.* 9, *r.* persuaded, *l. ult*, *for* vos, *r.* suos; *p.* 25, *l.* 16, *for* before, *r.* rather than; *p.* 27, *l.* 2, *r.* uninterrupted succession; *p.* 28, *l.* 14, *after* city. *r.* of Leyden. *p.* 30, *l.* 22, *for* is *r.* seems; *p.* 32, *l.* 2. *for* lead. *r.* led p. 34, *l.* 4, *r.* In this year he was, *l.* 8, *for* 1725, *r.* 1715; *p.* 35, *ult. dele* punctum; *p.* 38, *l.* 15, *after* as, *r.* it was; *p.* 41, *l.* 7; *erase* That; *p.* 42, *l.* 2, *erase* How; *p.* 50. *l.* 11, *after* as, *r.* to; *p.* 53, *l.* 11, *r.* aptitude; *p.* 55, *l.* 19, *erase* as; *p.* 71, *l.* 2, *for* to make, *r.* made; *p.* 80, *l.* 18, *for* can extend, *r.* naturally proceeds; *p.* 91, *l.* 12, *for.* on, *r.* in, *p.* 97, *l.* 7, *after* these, *r.* mistakes, *l.* 10, *after* and, *r.* their; *p.* 98, *l.* 8, *r.* Conjecturers; *p.* 101, *l.* 13, *for* and what was, *r.* before; *p.* 113. *l.* 2, *after* yet, *r.* big; *p.* 125, *l.* 16, *r.* BAUHIN; *p.* 126, *antepen*, *for* not, *r.* by no means; *p.* 140, *l.* 16, *r. for* this, *r.* the; *p.* 159, *l.* 14. *r.* Scrupulous; *p.* 163. *antepenult*, *r.* subject; *p.* 171. *penult for* shall, *r.* will; *p.* 198, *l.* 13. *r.* Seculo; *p.* 215, *l.* 2, *r.* Mortimero; *p.* 217, *l.* 11, *r.* parares.

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PAGE 4, *for* 111 and Mark, *read* as was lately Mark; p. 6, *l.* 8, *penult.* r. separatio; p. 8, *l.* 4, r. orat. [illegible]; p. 11, *l.* 10, *after* or r. that They should be; p. 14, *l.* 20, r. dissections; p. 23, *l.* 9, r. persuaded, *l. ult. for* vos, r. suos; p. 25, *l.* 16, *for* before, *r.* rather than; p. 27, *l.* 2, r. uninterrupted succession; p. 28, *l.* 14, *after* city r. of Leyden. p. 30, *l.* 22, *for* is r. seems; p. 32, *l.* 2, *for* lead, r. led; p. 34, *l.* 4, r. In this year he was, *l.* 8, *for* 1725, r. 1715; p. 35, *ult. dele* punctum; p. 38, *l.* 15, *after* as, r. it was; p. 41, *l.* 7, *erase* That; p. 50, *l.* 2, *erase* Now; p. 50, *l.* 11, *after* as, r. to; p. 53, *l.* 11, r. aptitude; p. 55, *l.* 10, *erase* as; p. 71, *l.* 2, *for* to make, r. mirror; p. 80, *l.* 18, *for* can extend, r. naturally proceeds; p. 91, *l.* 12, *for* on, r. in; p. 97, *l.* 7, *after* these, r. [illegible]; p. 10, *after* and, r. their; p. 98, *l.* 8, r. Conjectures; p. 101, *l.* 13, *for* and what was, r. before; p. 113, *l.* 2, *after* yet, r. big; p. 125, *l.* 16, r. Bautius; p. 126, *after* [illegible], r. by no means; p. 140, *l.* 16, r. *for* this, r. the; p. 150, *l.* 14, r. Saturnalia; p. 163, *l.* [illegible], r. subject; p. 171, *penult. for* [illegible], r. will; p. [illegible], *l.* 13, r. Gesulo; p. 215, *l.* 2, r. Maximiero; p. 217, *l.* 11, r. parares.

THE LIFE OF Dr *H. BOERHAAVE.*

PART. I. SECT. I.

Of his Birth and Education.

TWO of the principal inducements to record the lives of Thoſe, who by their diſtinguiſh'd merit have done honour to mankind, are, to reflect that honour on their memory, and to excite poſterity to a noble emulation; Biography is not more laudable in the former of theſe reſpects, than uſeful in the latter, when converſant about ſuch perſons, as were bleſt with extraordinary endowments, and ſtudiouſly exerted them for the benefit of ſociety.

From hiſtory it appears, that ever ſince the riſe of the Athenian common wealth, the

the ſciences have flouriſhed moſt under the freer governments, eſpecially in Republics; witneſs the United Provinces; yet among the many renowned for their learning and labours, which that country has produced from ERASMUS to the preſent time, it may be difficult to mention one more univerſally celebrated than Dr H. BOERHAAVE, late Profeſſor of phyſic in the univerſity of Leyden.

The gratitude of ancient times dignified even the native place, however obſcure, of men famed for ſcience; would ARPINUM have remained memorable to this day, had not CICERO been born there? and may not VOORHOUT likewiſe, a ſmall village in Holland, about two miles diſtant from the Harlem-gate of the city of Leyden, be great in after ages by the birth of a perſon, no leſs deſervedly eminent in a moſt uſeful profeſſion during many years of his Life; no leſs ſerviceable to the world by his remains after death; which will probably ſecure to him a future fame not inferior to that illuſtrious Philoſopher's, altho' he never ſeem'd alike anxious about it.

He

He was born in the year 1668, on the ſt of December, about one in the morn- g.

His father, the Reverend Mr JAMES BOERHAAVE, miniſter of the church in hat village, had "a good acquaintance with the Hebrew as well as Greek and Latin languages, but excelled in his knowlege of hiſtory; and was no leſs remarkable for frankneſs and candour in general, than for the prudence of his œconomy, and a tender exemplary behaviour to his nu- merous offspring;" his firſt wife, the mo- er of HERMAN, was HAGAR (daughter f HRRMAN DAELDER of Amſterdam, very ingenious artificer, and trader in nſtruments for navigation, particularly the ariners compaſs;) her genius and delight n phyſic was ſuch, that ſhe became really killed in it: But whatever may be aſcrib'd o the inheritance of that genius, her ſon's ducation owed little to her influence; for he died when he was but five years old. Ap. § 1.

To reſtore a mother to ſeven children, his father the year enſuing married Mrs DU BOIS, a miniſter's daughter in Leyden, who

Ap. § 2. anſwered his intention effectually, "by "ſuch obliging impartial conduct, that her "children-in-law eſteem'd her as their own "mother."

By the former wife were ſix daughters, beſide HERMAN the only ſon, and by the latter two ſons, and four daughters; JAMES the elder of theſe ſons, who was deſign'd for phyſic, is an eminent divine at Leyden, and MARK the younger, at Breda.

But HERMAN, who by deſcent ſeems to have been equally related to learning and ingenuity, divinity and phyſic, was inſtead of his brother JAMES intended by their father for divinity; with this view "he himſelf initiated him in grammar, "according to the method of VOSSIUS, "and proceeded with him from the Collo-
Ap. § 3. "quies of ERASMUS to TERENCE, the "Greek teſtament, and univerſal hiſtory, "particularly CHRISTIANI MATTHIÆ "Theatrum;" and with ſuch ſucceſs, that "at eleven our youth was well verſed in "theſe, expert in the rules of the Latin and "Greek grammar, ready at tranſlating

"and

" and writing Latin, and not ignorant of " etymological learning."

Due regard was had at proper intervals to invigorate the body and divert the mind, not by trifling recreations, but by the inſtructive, as well as ſalutary exerciſe of horticulture, which contributed not a little to his natural robuſtneſs; by ſuch laborious interludes at a mature age, he prevented thoſe hypocondriacal diſorders, that frequently attend too ſedentary a ſtate, to remedy which, ſome imprudently have recourſe to ſpirituous liquors inſtead of exerciſe; and, decoy'd by momentary relief, impair their conſtitutions, and ſhorten their days. Although the pleaſure and advantage of that amuſement rendered it his favourite afterwards, he was neceſſitated to diſcontinue it about the twelfth year of his age, when he was unhappily afflicted " with a malig- Ap. § 4. " nant ulcer in his left thigh, eluding the " art of ſurgery, and occaſioning ſuch ex- " ceſſive pain," as greatly interrupted his ſtudies for five years together; but at length, after all the vain efforts of phyſicians,

* he himſelf, "by fomenting it continual-
"ly with ſalt and urine, effected a cure,
"and thereupon conceived his firſt thoughts
"of ſtudying phyſic."

In 1682, being now fourteen, he was ſent to Leyden for the benefit of his health and learning, and put under Mr WYNSCHOTAN, then maſter of the publick ſchool, who, upon examination, placed him in the fourth form: Such were his abilities and application, that at the end of ſix months, obtaining the uſual premium, he aſcended into the fifth; and at the expiration of the year mounted to the ſixth and higheſt claſs, from whence 'tis cuſtomary after ſix months to be removed to the univerſity; but at this juncture the calamitous death of his father, leaving a wife and nine children (of which this, not ſixteen, was the eldeſt) with but a ſlender proviſion, had like to have fruſtrated his ſcheme; and, though he was rewarded with

* The ſurgeons in Holland are generally barber-ſurgeons, who perform the rougher operations under the direction of phyſicians; lithotomy, couching of cataracts, &c. ſome phyſicians make a part of their province *there*, as ſome of ours do midwifry.

with all the prizes attainable at ſchool, yet on account of his circumſtances, and remaining indiſpoſition, he choſe "to continue there half a year longer." Ap. § 5.

Upon his admiſſion at ſixteen into the univerſity, he was advantageouſly diſtinguiſhed by a friend of his father's, Mr TRIGLAND, one of the profeſſors of divinity, who building the higheſt expectations on the quickneſs of his apprehenſion, and the virtues of his mind, procured him "the generous patronage of "Mr DANIEL VAN ALPHEN, burgo-maſter of Leyden; by the advice of theſe Ap. § 6. "gentlemen he attended SENGUERD's lectures in logic, the uſe of the globes, "natural philoſophy, metaphyſics, and "ethics;" all which he imbibed with ſuch facility and ſucceſs, as to maintain diſputations five times under SENGUERD by this profeſſor's ſpecial deſire: He likewiſe attended the learned JACOB GRONOVIUS on Greek and Latin authors, (whoſe ſtile he has been thought to imitate in ſome of his earlieſt orations;) RYCHIUS on Latin claſſics, rhethoric, chronology, and geography;

TRIGLAND and SCAAF, on the Hebrew and Chaldee languages; all to understand the sacred writings in their originals; these
Ap. § 7. he laboured incessantly, "'till perceiving "the necessity of mathematics," and applying a little to them in 1687, he found this study so entertaining, that, not content with compassing soon geometry and trigonometry, he proceeded to algebra under VOLDER, in the beginning of 1689, and with a genius adequate to abstruse speculations, expresst "the highest satisfaction "in the geometric synthesis of the ancients, "as improving the power of the under-"standing, and in the analysis of the mo-"derns, as adapted to making new disco-"veries." In this year, the Twenty first of his age, he gave a specimen of his erudition and eloquence in an academic oration on this topic, "that * the doctrine of EPI-"CURUS concerning THE CHIEF GOOD "was well understood by CICERO;" upon which he received, by way of premium, the

* Oratione academica *probabat* bene intellectam a CICERONE, *& confutatam* sententiam EPICURI de summo bono. *Orat. Shul: p.* 14.

the golden * medal which uſually accompanies a general applauſe merited by any ſuch probationary exerciſe.

In 1690, he took a degree in philoſophy. The ſubject of his theſis was, † "the diſtinct natures of the mind and body." In this performance, by a ſtrength of argumentation much ſuperior to his years, he ſubverted the ſyſtems of EPICURUS, HOBS and SPINOSA. The peculiar eſteem ſignifyed hereupon by VOLDER his promoter, excited the envy of ſome of his co-temporaries,

* Whoever propoſes to give a Latin oration in that univerſity, is required firſt to addreſs the rector magnificus, (nearly analogous to the chancellor of our univerſity, excepting that there the election out of the profeſſors only is annual,) who with the ſenators inform the curators of it, and theſe appoint a day for the oration; then he waits on each of the curators, and on the chief magiſtrate and ſheriffs of the city to deſire their preſence. If the oration gives general ſatisfaction to the curators, their ſecretary is ſent to his habitation to thank him in their name, and to acquaint him, that he ſhall have the preſent of a golden medal, which has on the front a PALLAS in Relievo, on the reverſe an inſcription, (relating the occaſion and name of the perſon) in letters not ſtamped but engraved. It is worth 150 guilders, ſomewhat above 13 guineas.

† Diſputationem inauguralem habuit de diſtinctione mentis a corpore.

raries; nevertheleſs the fame of his literature and piety was daily increaſing.

Having laid this ſolid foundation, he proceeded to raiſe the ſuperſtructure in divinity under the inſtruction of thoſe three profeſſors, TRIGLAND, SPANHEIM and MARK; the firſt "gave lectures on He-
Ap. § 8. "brew antiquities; the ſecond on eccleſia-"ſtical hiſtory," under whom BOERHAAVE held a theological diſputation in public.

This particular account of his education was requiſite, ſince as few have ever been poſſeſs'd of a knowledge ſo extenſive, it may be uſeful to learn by what helps it was acquired.

SECT. II.

Of his Studies, Profeſſion and Promotion.

HE was now become ſuch a maſter of the Greek, Hebrew, and Chaldee languages, that, rejecting tranſlations, he convers'd only with originals; "and "join'd with the abovementioned courſe

"of

" of ſtudy, a daily peruſal of the primitive Ap. § 9.
" fathers, beginning from CLEMENS RO-
" MANUS, he deſcended in chronological
" order, and made them his interpreters of
" the new teſtament, highly reverencing
" the ſimplicity and purity of their doc-
" trine, the integrity of their lives, and
" the ſanctity of their diſcipline. On the
" contrary, deſcending to their ſucceſſors,
" he lamented the ſufferings of chriſtiani-
" ty from the ſophiſtication of divine
" truths by the ſubtility of the ſchoolmen;
" apprehending it moſt abſurd, that in-
" terpretations of the ſacred writings ſhould
" be ſought from ſects of ſophiſts, or
" wreſted to quadrate with the metaphyſi-
" cal notions of PLATO, ARISTOTLE, A-
" QUINAS, SCOTUS, or even of DESCAR-
" TES, whoſe philoſophy was then in fa-
" ſhion; to this he imputed the animoſities
" and dire contentions, too frequent among
" men of a ſcholaſtic genius, and the bane of
" religious peace: But what was ſtill worſe,
" though all allowed, where the ſcrip-
" tures ſpeak in a manner condeſcending
" to human frailty, they ſhould be under-
" ſtood

" ſtood in a ſenſe worthy our notions of " the deity; yet this ſenſe was by every " one explained juſt according to his pecu- " liar metaphyſical tenets: Upon theſe " conſiderations he was the more ſhocked " at the prevalent cuſtom with the ſect " in power, of making its metaphyſical " doctrines, inſtead of the ſacred records, " the ſtandard for orthodoxy; hence ſuch " a variety of opinions about the plaineſt " doctrine." Can any man duly weigh theſe reflections from a perſon ſo young, in a ſcience ſo arduous, without entertaining an exalted conception of the ſtrength of his judgment, and ſincerity of his heart? how early a victory had he gained over thoſe prejudices and partialities, wherewith the beſt education is tinctured, and which the wiſeſt ſeldom eradicate, 'till ripe in years?

Notwithſtanding he was thus qualified for entring on the profeſſion, which according to his father's intention he had hitherto ſolely in view, and that his patrimony was by this time almoſt exhauſted; ſuch was his modeſt diffidence, that fear-

ing

ing to ruſh immaturely into ſo ſacred a function, he attempted rather "by teaching "mathematics," to defray the expence attending the farther proſecution of his theological ſtudies; by which undertaking, he not only increaſed his reputation, but (what laid the foundation of his future fortune,) was introduced to an intimate friendſhip with that illuſtrious magiſtrate JOHN VAN DEN BERG, burgomaſter of Leyden, by whom he was recommended to the curators, to compare the Voſſian manuſcripts (purchaſed in England for the publick library at Leyden) with the catalogue of ſale; which he executed with ſuch accuracy, as to procure him the eſteem of that venerable body, and to ingratiate himſelf in ſo particular a manner with Mr VAN DEN BERG, that this gentleman became ever after ſollicitous for his advancement; and obſerving with what incredible expedition our young divine diſpatched whatever he applyed to, perſuaded him, for his greater ſecurity, to join the ſtudy of phyſic to philoſophy and theology; a precedent not to be urged by thoſe, who exerciſe both Ap. §10.

functions,

functions, without diſcovering abilities that capacitate them to excel in either.

In complaiſance he thought as a relaxation only from divinity, to have dipt into phyſic, being duly prepared for it by his acquaintance with the learned languages, mathematics, and natural philoſophy. But his natural and irreſiſtible propenſity ſoon prevailed with him to make a buſineſs of what he firſt propoſed as an amuſement; and his eagerneſs increaſing with his advances, he reſolved to take a degree in phyſic before his ordination.

The ſtudy of medicine commencing with that of anatomy, he diligently "peAp. § 11. "ruſed VESALIUS, FALLOPIUS, and BAR"THOLIN, often times diſſecting brutes "alive with his own hand, and attending "the public deſſections of profeſſor NUCK;" nay the very ſlaughter-houſes did not eſcape him, wherein he confeſs'd many uſeful obſervations had occurred to him; So far was he from yielding an implicite faith to authority, or from declining the irkſome, but profitable labour of diſſecting and exploring bodies with his own hands and eyes, alike

alike qualified with patience to obſerve, and fidelity to deliver the dictates of nature.

Thus grounded, he next applied himſelf to the fathers of phyſic, beginning with HIPPOCRATES, and in their chronological order read carefully all the Greek, and ancient Latin phyſicians: But ſoon finding that the later writers to the middle of the fifth century, "were almoſt wholly "indebted to that prince of phyſicians for "whatever was valuable in them, he re-"ſumed HIPPOCRATES, to whom alone in "this faculty he devoted himſelf for ſome "time, making excerpts, and digeſting them "in ſuch a manner," as to render thoſe ineſtimable remains of antiquity quite familiar to him. Afterwards, with leſs difficulty, he became acquainted with the moſt authentic modern authors, and ſingled out that ſecond HIPPOCRATES SYDENHAM, whom after frequent repetition, and always with additional ſatisfaction, he uſually ſtiled the Immortal SYDENHAM. Ap. § 12.

Having advanced thus far, chemiſtry, the key of nature, which diſcloſes her myſterious

Orat. *Boerh.* 1729. p. 29.

Ap. § 13.

ſterious receſſes, ſo captivated him, that he ſometimes ſpent days and nights ſucceſſively in the ſtudy, and proceſſes of this art: It luckily happened about the ſame time he had contracted an intimacy with Mr STAM, an eminent chemiſt then at Leyden. As it is very uncommon among writers to publiſh the whole of their knowledge on any ſubject, and eſpecially in chemiſtry, beſides that many, who are unwilling to load the world with books, are greater adepts than others, who have printed chemical treatiſes with pompous titles; great is the advantage, which a ſkilful and ingenious operator, who neither conceals any material part of his knowledge, nor diſſembles his ignorance, may afford a ſtudent in this branch of philoſophy; and perhaps much greater, than in years he could obtain from Books, and his own labours; the ſenſe of an obligation of this nature produced as advantageous effects to Mr STAM's ſon an apothecary, who was always particularly favoured by BOERHAAVE.

In

In Botany, " by the help of the Flores
" Floræ Hermannianæ (for he never attend- Ap. § 14.
" ed professor HERMAN's lectures") he made
considerable proficiency; not contented
with inspecting the plants in the physic gar-
den, he sought others with fatigue in fields,
rivers, &c. and sometimes with danger
in almost inaccessible places, thoroughly
examining those he found, and comparing
them with the delineations of authors.

Thus various was his knowledge, and
not less profound; for instead of dabbling
in the rivulets of literature only, in all the
arts of science that engaged him, it ap-
pears he had immediate recourse to the
fountain, and there was not to be satiated
with moderate draughts; by this diver-
sity of subjects his mind was enlarged,
and exercising it self on a multiplicity of
ideas, became better acquainted with the
relations of things. And we shall see here-
after that his diligence in quest of truths
remaining to be discovered, was not infe-
rior to that he now employed in *attending*
earnestly to what was already revealed:
strict attention itself greatly contributes to

C 2 further

further diſcoveries, amplifying it's object like a microſcope it exhibits to view what eſcapes the ſight of a leſs careful obſerver. Moreover the genius of diſcuſſing and deciding were happily united in him, and he had the faculty of coming at truth in his enquiries the ſhorteſt way, avoiding fruitleſs digreſſions; in a word, his capacity was equalled by nothing but his induſtry; no time paſſed unimproved, but continually adding one branch of ſcience, nay one ſcience to another, he proceeded to examine ſyſtems by experiments, and from theſe to frame new ſyſtems; he gained all the light he could from the obſervations of others, but truſted to his own.

All this progreſs in phyſic hitherto was (as has happened to ſeveral who have excelled) without any aſſiſtance from lectures, except thoſe mentioned in anatomy, and a few by profeſſor DRELINCURT on the theory: But, what is more ſurprizing, he was ſo far from declining the prieſthood, that not leſs mindfull of the province alloted him by his father, amidſt mathematical, philoſophical, anatomical, chemical and

Ap. § 11.

and medical reſearches, he ſtill earneſtly purſued divinity, intending before he was initiated in that profeſſion to have delivered an oration on the following ſubject, * "why "ſo many converts to chriſtianity were "made formerly by illiterate teachers, and "ſo few are made by the learned of the "preſent age." Ap. § 15.

But in purſuance of his plan he went first to the univerſity of Harderwick in Gelderland, and in July 1693 was created there doctor of phyſic. An abſtract is given of the Theſis he then publiſhed in our appendix, from which it may appear, how much ſuperior it was to the common juvenile performances on ſuch occaſions. P. 14.

As ſoon as he returned to Leyden, full of his deſign of engaging directly in the miniſtry, he found an invincible obſtruction to the execution of it. In the paſſage boat ſome diſcourſe was accidentally ſtarted about the doctrine of SPINOSA as ſubverſive

* Cur olim ab indoctis tam numeroſi, hodie à doctiſſimis tam pauci Chriſtiani ſunt facti.

of all religion; one of the paſſengers, who exerted himſelf moſt, oppoſed to this philoſopher's pretended mathematical demonſtrations only the loud invectives of a blind zeal; whereupon BOERHAAVE, who was always an enemy to triflers, could no longer refrain from aſking him calmly, whether he had ever inſpected the works of the author he decryed; the clamorous orator was at once ſtruck dumb, and fired with ſilent reſentment; another, who had not yet interpoſed, finding with regret the controverſy dropt upon this queſtion, whiſpered the perſon next him to learn BOERHAAVE's name, takes it down in his pocket book, and as ſoon as arrived at Leyden made it his buſineſs to propagate the malicious falſehood every where, that BOERHAAVE was become a Spinoſiſt. What an inſtance this of the violent propenſity of mankind to detraction? how monſtrous their credulity who countenanced this calumny againſt the very man, who had ſo lately in his philoſophical diſputation entirely confuted SPINOSA, with the whole ſyſtem of atheiſm? Yet ſo far was this or any other conſideration

tion

tion from undeceiving the majority, ſo great were the art and influence of the detractors, that perceiving how generally thoſe ſuſpicions and averſions had obtained, and being now alike qualified for preſcribing and preaching, he judged it imprudent to riſque the refuſal of a licence for the latter, when he had ſo fair a proſpect of riſing by the former in a ſphere of life leſs obnoxious to caprice; upon finding his ſtedfaſt friends, particularly Meſſieurs VAN DEN BERG, ALPHEN and TRIGLAND unanimous in this opinion, he immediately proceeded to reviſe thoſe branches of medicine, he had already cultivated, particularly chemiſtry, and neglecting no opportunity of improving himſelf, directed his chief care and labour towards attaining the utmoſt ſagacity in the method of HIPPOCRATES, that is, by obſervation and enquiry.

For now he joined practiſe with reading, and altho' a man thus accompliſhed might be ſuppoſed to have met with ſuitable encouragement, yet he had the mortification to ſee many leſs deſerving fall into greater

buſineſs; for ſlow commonly is the advancement of thoſe, who riſe only by real worth; nevertheleſs tho' his acquiſitions were ſo ſmall, and circumſtances ſo narrow, he undauntedly perſiſted in the purſuit of knowledge with this laudable reſolution, that if ever proſperity was his portion, it ſhould be the reſult, not of little arts or diſingenuous ſollicitations, but of ſolid learning, and intrinſic merit: A ſtrong confirmation of which happened during this ſituation, when he was more than once intreated by a firſt favourite of King WILLIAM's to ſettle at the Hague; notwithſtanding great terms were propoſed, and greater promiſes made to induce him, he conſtantly declined it: Aſpiring more after knowledge, than preferment, he was content in proſecuting the former with the poſſeſſion of liberty, equally remote from the interruption of a crowd, and the intrigues of a court: His cuſtom after viſiting patients was to retire to his ſtudy, or laboratory (which well furniſhed is an abſtract of nature it ſelf) making an exact ſcrutiny into all the branches of phyſic;

Ap. § 17.

Orat. *Boerh.* 1729. p. 11.

to

to teach mathematics; to read the ſcriptures, and thoſe * authors who treat of a certain method of loving GOD.

In this courſe he continued to the year 1701, when by the importunity of his friends above-mentioned (for his modeſty made him at the firſt oppoſe the motion) he was preſuaded on the death of Profeſſor DRELINCURT to take the office of lecturer upon the inſtitutes of phyſic; whereupon he delivered an oration the 18th of May, N. S. the ſubject of which was a recommendation of the ſtudy of HIPPOCRATES; apprehending that either thro' indolence or arrogance this founder of phyſic had been ſhamefully neglected by thoſe, whoſe authority was likely to have too great weight with the ſtudents of medicine; he therein repreſents "the of-" fice and ſects of phyſicians, the origin " of the art among the Babylonians and " Chaldeans, the ſtate of it among the

* Et auctores qui profitentur docere rationem certam amandi Deum. Such as BOYLE on Seraphic Love, &c. Vide BOERH. *Diſſertat. de Chemia nos errores expurgante*, p. 13.

" Egyptians and Grecians, the original con-
" junction of theory with practice, the abuſe
" of the former by making ſpeculation
" ſuperſede, rather than build upon obſer-
" vation and experience; the neceſſity of
" collecting naked and indiſputable facts,
" and delivering them untainted by par-
" tiality or hypotheſes, and the prehemi-
" nence of this author on that account a-
" bove the reſt of the ancients."

As the character he here draws of HIPPOCRATES ſeems to have been ſo nearly deſcriptive of his own, take it as follows; " by his inceſſant attention, ſingular " penetration and indefatigable applica- " tion he made a larger collection of the " ſigns and ſymptoms of diſeaſes, than " perhaps all other writers ever ſince; " his narrations are ſimple, perſpicuous, " methodical, accurate, modeſt, frank and " faithful; nice was his diſtinction be- " tween the appearances ariſing from the " diſeaſe it ſelf, and from the errors com- " mitted by the phyſician, attendants, or " in the regimen. His obſervations were " as minute, as important, whence he be-

" came

'came ſo excellent both in diſtinguiſhing 'caſes, and fortelling their events, nor was 'his ſagacity in diſcovering remedies greater, 'than his benevolence in communicating 'them. He was neither precipitate in 'the application, nor in determining the 'effects of them; neither concealed his 'bad, nor boaſted of his good ſucceſs. 'The medicines he uſed were few, and 'cheap, but efficacious; more ſollicitous 'about the juſt and ſeaſonable application 'of thoſe that were neceſſary, than about 'variety; and his preference of experienced to other medicaments, was as conſtant, as his regard to evident, before occult cauſes; by conſidering the courſe and duration of diſeaſes, obſerving the days when they raged or remitted, controuling or forwarding the determination of the morbid matter, digeſting its crudities, accompanying what was maturated through the paſſages indicated by the diſtemper, directing the ſeparation, and promoting it's expulſion, laſtly being rather an imitator and aſſiſtant, than by raſh attempts a diſturber of nature; he

" truly

" truly ſaved all who recovered, without
" being the executioner of thoſe that miſ-
" carried under his care. By attending
" ſtrictly to what proved prejudicial or
" ſerviceable, he became acquainted with
" remedies, and by contemplating the
" time and manner in which nature alone
" puts the enemy to flight, he eſtabliſhed
" rules for the uſe of thoſe remedies
" which after almoſt infinite experience
" and ſucceſs, he ventured to recommend
" (in treating on the virtues of medicines)
" but not without thoſe cautions, which
" might deter perſons unſkilled in the art
" from the practice of it. Who before
" HIPPOCRATES maintained the ſeaſons
" to be the cauſe of thoſe diſeaſes that uſual-
" ly reign in them? that the particular va-
" riations of weather produced particular
" diſeaſes? and that endemic diſorders or
" thoſe peculiar to each place were to be
" accounted for from the ſituation of the
" place, and the peculiar manner of living
" to which it's inhabitants were accuſtom-
" ed? After making the beſt uſe of the re-
" cords that deſcended to him the 19th
" phyſician

' phyſician by ſucceſſion in his family,
' and having improved himſelf by travel-
' ling into various countries; he taught a
' great number of ſcholars, many of whom
' afterwards ſituated in different parts of
' the world, informed him of whatever oc-
' curred worthy his notice; with theſe
' qualifications and aſſiſtances he compil-
' ed his almoſt conſummate Collection of
' Obſervations." — By this heroic vindica-
ion at that time he reſcued this venerable
ge from their oppreſſion, who by degrading
IPPOCRATES ſapt the very foundation of
e art itſelf, and not only retrieved, but
ſtabliſhed his juſt, and ancient reputation.

BOERHAAVE's pupils could not but ob-
rve in his lectures on the medical inſtitu-
ons how judiciouſly he interſperſed che-
iſtry, ſo as to render this art, by his ſin-
ular application of it, ſubſervient to the
luſtration of them, and were thereupon
delighted with their preceptor and his
octrine, that they * ceaſed not requeſting,
'till

Orat. *Boerh.* 1729. p. 13.

* Some Engliſh gentlemen formerly ſtudents at Ley-
n, are thought to deſerve the credit of firſt en-
uraging BOERHAAVE to give lectures on phyſic
that univerſity.

'till by dint of importunity alone they prevailed with him, to inſtruct them in chemiſtry, as well as in the practice of phyſic.

All this he executed in ſo extraordinary a manner, that two years afterwards in 1703, he was invited to a vacant profeſſorſhip of medicine by the univerſity of Groningen, which like former offers he declined with grateful acknowledgments for the honour intended him; however his patron Mr VAN DEN BERG then preſident of the burgo maſters of the city, and one of the ſeven curators of the univerſity, repreſented this invitation and refuſal in ſuch a light, that they thought themſelves in gratitude obliged to iſſue a decree for an augmentation of his annual ſalary, and for the reverſion of the firſt medical profeſſorſhip that ſhould be vacant, there being at that time five profeſſors in ordinary of phyſic.

Hereupon he delivered a ſecond oration
Ap. § 24. concerning the uſe of mechanical reaſoning in phyſic, in which he remarks that qualities ariſing from the magnitude, figure and

and motion of bodies had been too much neglected, notwithſtanding the fabrick of the animal body and circulation of the blood are adjuſted in a great meaſure according to the mechanical laws common to other bodies, which muſt conſequently render the knowledge of thoſe laws not only extreamly uſeful, but abſolutely neceſſary; and ſhows, how much medicine had ſuffered from metaphyſicians and chemiſts, who ignorant of mechanics had pretended to ſolve phœnomena relating thereto by fictitious principles of their own; he then repreſents the ſimplicity of mechanics, and the invariable laws reſpecting both the animal ſolids and fluids: and no where ſilences thoſe hermetick triflers more effectually, who admit only of chemical cauſes, and explanations in phyſic, as may appear from the following paſſage, where treating of the animal fluids, he ſays, "from "the motion of the fluids proceeds life, and "from the free circulation of them health; "as ſoon as the fluids ceaſe to move the "body is dead, reſtore their circulation and "life returns. A man falling into a per-

„ fect

" fect ſwoon upon ſeeing another blood-
" ed, for a time ſeems abſolutely dead, ye
" all the ſolids of this body are in a na-
" tural ſtate, and the fluids alſo, circulation
" excepted: Agitate but the nervous ſy-
" ſtem ſo as to convey what ſhall renew
" its ſyſtole to the heart, death vaniſhes,
" life is reſtored, and not life merely, but
" warmth, colour, motion, cogitation, and
" every function: where then is the fer-
" ment here (for now he attacks the che-
" miſts?) what conflict of ſalts here? what
" oil or ſpirit is now either generated or de-
" ſtroyed? nothing all this while is loſt or
" reſtored but motion, and yet life loſt is
" reſtored again: in like manner birds and
" inſects, whoſe fluids congeal in winter,
" by warmth are ſoon brought to life, *i.e.*
" the circulation is renewed:" but a more
appoſite example is, " that of laying open
" the thorax of an animal, and when it is
" dead, only inflate the lungs with a pair of
" bellows, introducing the noſel into the
" wind-pipe, and it inſtantly revives;"
this likewiſe illuſtrates that ſurprizing ſug-
geſtion in his laſt oration on medical ho-

" nour

our and ſervitude; "an animal drowned may be reſtored to life, whilſt the lungs remain entire and uncorrupted, by a ſtrong inflation of air into them, and expreſſion of it out again, repeating a while this operation. p. 19, 20. compare with theſe § 27, 28, 42 of his Inſtitutes."

During almoſt nine years BOERHAAVE ad officiated as a profeſſor with the title of ecturer only, when on Feb. 18th, N. S. 709, upon the death of Dr HOTTON the rofeſſorſhip of medicine and botany was onfered on him; his inaugural oration was pon the ſimplicity of true medical ſcience, herein exploding the fallacies and oſtentaion of alchemiſtical and metaphyſical vriters, he reinſtates medicine on the anient foundation of obſervation, experiments, and deductions naturally reſulting rom them.

In a few years he enriched the phyſic garden with ſuch a number of plants, hat it was found neceſſary to enlarge it to twice it's original extent.

In the year 1714 he arrived to the higheſt dignity in the univerſity, the Rectorſhip.

The

The ſame year Auguſt 8th, N. S. he was conſtituted profeſſor of the practice of phyſic in the room of BIDLOO, when twice a week he attended the univerſity hoſpital, not leſs to the advantage of his pupils, than of the patients; an hoſpital was hitherto wanting to furniſh him with proper ſubjects for improving the ſcience by new attempts in deſperate caſes; for the experience was not ſmall, which he had already obtained from an extenſive practice of many years joined with the advantage, which phyſicians in Holland have over ſome of their neighbours, who are ſeldom called to the aſſiſtance of their patients before the middle, or near the end of their diſtempers, whereas the Dutch phyſicians by being uſually conſulted at the very beginning, often prevent the ill effects, which the diſeaſe left to its ſelf or injudiciouſly treated is too commonly accompanied with; and at the ſame time they have an opportunity of inſtructing themſelves by obſerving the nature of the diſtemper in it's ſeveral periods; the curators of this univerſity being apprized, how neceſſary it is for the young

phyſicians

phyſician to be lead by one already verſed in practice to the bedſide of the ſick, before he ventures by himſelf to undertake the cure of diſeaſes, have very wiſely inſtituted this hoſpital entirely ſubſervient to the uſe of the univerſity, to which it is as eſſential an ornament as the anatomical theatre, chemical laboratory, phyſic garden, or the public libraries. At this hoſpital the profeſſors of phyſic are obliged to attend three months in their turn, and the ſtudents of the univerſity have liberty to viſit the ſick; and in caſe patients dye of any extraordinary diſtemper, the hoſpital is provided with a convenient amphitheatre, where the neceſſary diſſections are made with the greateſt accuracy and decency, notice being always given to the ſtudents to attend. Many remarkable caſes that occured under BOERHAAVE's care in this hoſpital are preſerved in manuſcript by ſome of his pupils.

And now, excepting only the advantages acquirable by travelling, which at the proper ſeaſon of life his circumſtances no ways permitted, what one further qualification was requiſite to form an accompliſhed

phyſician, or to make him more deſerving of the higheſt honour in his profeſſion?

It ſeems to have been about this time he was created preſident of the chirurgical college.

At the expiration of his rectorſhip in 1725, he delivered an oration "on the
Ap. § 24. "method of obtaining certainty in phy-"ſics." Having here aſſerted that we are entirely ignorant of the firſt principles of things, and that all our knowledge of their qualities is derived either from ſuch experiments, as ſubject them to our ſenſes, or from conſequences by an exact method of reaſoning deduced from thoſe experiments, he was led to reprehend the philoſophers, whoſe indolence had diſpoſed them to invent rather than attempt to diſcover both principles, and qualities, and in particular DES CARTES the idol of that time and country, in which he had ſpent twenty five years of his life. This doctrine happened to excite the outragious invectives of Mr R. ANDALA, an orthodox Carteſian profeſſor of divinity and philoſophy at Franeker, who was pleaſed to exclaim

claim the church was in danger; that the introduction of Scepticiſm and even Spinoſiſm would be the conſequence of undermining the Carteſian ſyſtem by ſuch a profeſt ignorance of the principles of things: in ſhort, his virulence was deemed ſo infamous, that the governors of the univerſity thought themſelves in honour obliged, (notwithſtanding BOERHAAVE's remonſtrances to the contrary) to inſiſt upon his retracting the opprobrium. The recantation was ſoon made with offers of further ſatisfaction: To which BOERHAAVE generouſly replied, the moſt agreeable ſatisfaction he could receive was, that ſo eminent a divine ſhould have no more trouble on his account. Thus the intended defamation was converted into the means of enhancing his fame.

Which the ſame year was ſo conſpicuous to the royal academy of ſciences at Paris, that he received from thence a diploma, appointing him a correſpondent in natural philoſophy; and in the year 1728, he was elected a member of that academy in the room of Count MARSIGLI, deceaſed,

BOERHAAVE's intimate friend, and a like prodigy in natural knowledge; and April 30th, 1730, he was propoſed by Dr MORTIMER (who long enjoyed the happineſs of a free correſpondence with him) to our Royal Society, and was choſen a fellow *unanimouſly*, an honour, that ſcarce any one of what rank ſoever can boaſt of, ſo great is the caution uſed by this worthy body in the election of their fellows, that there are almoſt always ſome negatives; this compliment had been paid him ſooner, had he been ſooner acquainted with the ſtatute of the ſociety, which prohibits admiſſion to any one, who does not firſt expreſs his particular deſire of that favour. To both theſe ſocieties he imparted ſome experiments related hereafter, concluding ſuch returns the moſt acceptable requital of ſuch obligations.

Nor was any opportunity neglected all this while of promoting him at home, his glory was become that of his univerſity, which nevertheleſs did not on account of his eminent talents conſider him more worthy it's indulgences, than for his gra-

titude

titude in acknowledging them: accordingly in 1718, he ſucceeded LE MORT in the profeſſorſhip of chemiſtry; and September 21, made an oration on this ſubject, "that chemiſtry was capable of clear- Ap. § 24.
"ing it ſelf from it's own errors." How well he was qualified for this province, had appeared from his private courſes annually repeated for fourteen years paſt; yet he was willing to convince a larger audience, that even unſought it was not injudiciouſly aſſigned him, notwithſtanding he was already engaged in ſo many other profeſſorſhips; this was fully effected by his manner of handling the well choſen ſubject juſt mentioned. In a former diſ- p. 28.
putation he had ſhown mechanics to be applicable to phyſic ſo far as the animal ſolids and fluids participated of the properties common to all ſolids and fluids, and no farther; and intimated, that thoſe particular properties, which conſtantly diſtinguiſh a body from any other, and which could not be known to reſide in that body by thoſe qualities it has in common with all others, are for the moſt part the objects

of chemiſtry; as the diſcreet application of both theſe arts tends greatly to the improvement of phyſic as well as philoſophy, ſo the endeavours to extend either beyond it's due limits, and much more the ſubſtituting either for both, have rendered them in their turns prejudicial and contemptible: altho' the alliance of late maintained between geometry and natural philoſophy, has very much increaſed the uſe of the former, and the ſolidity of the latter, yet it has been perhaps too much the faſhion of this age to ſolve all phenomena mechanically, as of the preceeding to account for them chemically; the ſcene is changed in all but partiality; nevertheleſs the contenders for mechanical reaſoning only have not carried their extravagances to ſuch a height as the chemiſts, who not content to ſubject philoſophy and phyſic to their empire, invaded religion alſo, and by a marvellous ſagacity diſcovered the doctrine of tranſmutation to be contained in the Pentateuch, the books of SOLOMON, and the Revelation of St JOHN; nor were any myſteries, that of the Trinity itſelf, inexplicable

explicable with theſe adepts; and who ſo able to interpret myſteries as thoſe who created ſuch multitudes of them? for the vainer alchemiſts, who ſought the admiration more than the advantage of the reader, obſerving how prone mankind were to revere what they leaſt comprehended, envelloped their important doctrines ſo ænigmatically, that they proved not more intelligible to others, than lucrative to themſelves; however at firſt they might hope to procure a veneration proportionable to their obſcurity, they were at length among the wiſer exploded as darkning counſel by words without knowledge; thus did PARACELSUS, HELMONT, and the ROSECRUSIANS, abuſe a moſt uſefull art by the miſapplication of it, inſtead of improving it like that profound philoſopher of the 13th century ROGER BACON, who in the infancy of chemiſtry demonſtrated ſuch things performable by a combination of the powers of art and nature, as far exceeded the fictitious miracles of the Magi, and as were not to be effected by incantations or pretended diabolical arts; who

ridiculing ſuperſtition rightly diſtinguiſhed betwixt things natural and divine; poſſibly his ſkill in mathematics chiefly contributed to that diſcernment, which diſcovers the inconveniencies of extending a ſcience beyond it's due bounds. To a ſecond BACON, the great lord VERULAM, who almoſt exhauſted, as well as reſtored ſcience, the world is principally indebted for the firſt ſtep towards a cure of thoſe alchemical delirants, which has ſince been almoſt perfected by LIBAVIUS, BOYLE, BOHN, NEWTON, HOMBERG and STAHL, who by a legitimate reſtriction of chemiſtry have cauſed it to expunge it's own errors.

The eloquence and literature diſplayed in this oration upon an art diſcredited as much by the barbarous ſtile, as the idle conceits of illiterate writers, failed not to confirm the eſteem of his auditors, and afforded an earneſt of that large work his Elements of Chemiſtry; of which hereafter in part the ſecond.

On the 22d of September 1721, he paid his laſt devoir to a deceaſed friend and colleague, in a funeral oration on profeſſor BERNARD

BERNARD ALBINUS, the father of SIEGFRIED ALBINUS, the preſent celebrated profeſſor of anatomy at Leyden, where again he deſcribes his ſubject and himſelf at the ſame time in the following lines. "That he flouriſhed even in his old age as "an inſtructor by his inceſſant diligence in "improving himſelf by new diſcoveries: on "mathematics and mechanics he firmly "founded his natural philoſophy, whence "as well as from his chemiſtry carefully "reviſed, he furniſhed himſelf with pro-"per aſſiſtances in the healing art. What "was there uſefull in the anatomical, "chirurgical, theoretical, or practical writers "ancient or modern, which he had "not collected, digeſted, and fitly ap-"plied to promote the doctrine of his "profeſſion? with what judgment did "he methodize the fruit of his ſevere "ſtudies! and with what a neat ſimpli-"city, candour, and benevolence, did "he communicate it to his pupils! ſome-"times he would inculcate (ne quid temere) "beware of precipitation; ſometimes ad-"moniſh againſt indolent, or ſuperficial "proceedings.

" proceedings. How often he extolled
" that honeſt and diſcreet medical ſimpli-
" city too rarely found, and condemned that
" licentiouſneſs of aſſerting and framing
" hypotheſes, and diſputing with the
" ſubtlety of reaſon only, ſo deſtructive
" of the art, to the neglect of it's faithful
" miſtreſs *experience*, and the converting
" the dictates of HIPPOCRATES, *i.e.* of
" nature into the baneful fictions of thoſe
" idle and ignorant men, who have pre-
" ſumed to practiſe and teach phyſic with-
" out a tollerable acquaintance with the
" animal oeconomy, diſtempers, or reme-
" dies; and indeed the leſs their knowledge,
" the greater their pretenſions. He had
" the true way of explaining HIPPOCRA-
" TES by HIPPOCRATES, and the opera-
" tions of the body alſo not by fictitious,
" but demonſtrable anatomical principles,
" of enlarging the materia medica, and the
" ſcience of the ancients by recent diſ-
" coveries, with great caution and juſtneſs.
" How well did he dictate the method
" whereby diſeaſes were diſtinguiſhed and
" removed! His doctrine was ſound and
" certain,

" certain, as founded on obſervation, con-
" firmed by experience, and abſolutely
" impartial, as attached to no ſect. Won-
" der not therefore ſo many reſorted hither
" for inſtruction from all parts of Europe.
" To the publick welfare he ſacrificed his
" own, but never buſied himſelf imperti-
" nently. He was neither full of himſelf
" nor a diſparager of others, and ſo far
" from inſinuating any thing to the dimi-
" nution of his colleagues, that he recom-
" mended to his pupils an attendance
" on their lectures." How much is it to be lamented that the parallel cannot be extended to this article alſo? that " he
" left ſons who augmented this their here-
" ditary reputation."

Whilſt he was thus laborioufly ingaged in ſuch numerous and important employments, confiding too much in the ſtrength of his conſtitution; about the middle of Auguſt 1722, he was confined immoveable to his bed for ſix months with exquiſite arthritic pains; and from the like application he ſuffered another violent illneſs in 1727; but being threatned in the

year

year 1729 with a relapſe, he found himſelf under a neceſſity of reſigning the profeſſorſhips of botany and chemiſtry; this gave occaſion to that elegant declamation on April 28, N. S. in which he recounts many fortunate incidents of his life, returns his grateful acknowledgments to thoſe who contributed thereto, and expatiates on the pleaſures which attended the proſecution of his botanical and chemical labours.

His eighth and laſt oration he delivered February 8th, 1731, on laying down his rectorſhip a ſecond time; honoured as he was by the dignity of this office he became more ſo by his adminiſtration of it; in this oration he demonſtrates, that "a real "ſervitude to nature in obſerving her dic-"tates, and following her example, is the "ſole foundation of merit, intitling a phy-"ſician to the higheſt honours in his profeſ-"ſion; that the art of healing is never "more ſucceſsful, than when directed by "nature, being but her faithful ſervant." But what is nature? by this, for fear of miſconſtructions he afterwards declares himſelf to mean, "that chain of cauſes and

"effects

" effects, which ultimately terminate in the " ſovereign cauſe and director of all things! " That without inſtructions thus acquired, " the moſt learned and ingenious artiſt is " unable to explain the formation of the " parts, and the functions of the animal " œconomy; notwithſtanding all their pre- " tenſions by artificial digeſtions and ſepa- " rations to parallel the productions of na- " ture, the moſt conſummate adepts cannot " from bread and wine or other human " aliment prepare one drop of blood, " which nature effects ſo ſpeedily and con- " ſtantly; nay, they cannot regenerate blood " by any commixture of the very parts " into which they had ſeparated it by their " art; ſo much is ſanguification and nutri- " tion the work of nature only; upon a " knowledge therefore of her laws, and a " conformity to them, the ſucceſs in re- " gulating her motions, and redreſſing her " maladies muſt depend."

Thus have we traced this great man through the ſeveral gradations to his high- eſt dignity, hitherto mentioning thoſe pro- ductions only which each ſtep occaſioned.

In

In filling the places of ſo many eminent profeſſors, great muſt be the induſtry and abilities of the man who could rival each of his predeceſſors in their reſpective employments, how much greater were his, who ſo far exceeded them all, and that in ſo ſhort a time, and with ſo little aſſiſtance! Where, and when will another be found to execute the like ſo much to the advantage of the public, and his own reputation! Two profeſſors, men of diſtinguiſhed character, are not thought too many to ſucceed in his ſtation; VAN ROYEN in the practical college of phyſic, and in botany; GAUBIUS in chemiſtry, and the inſtitutes, or theory of phyſic, who are pleaſed to paraphraſe on the texts of their great preceptor, endeavouring to compenſate the loſs of their univerſity by worthily proſecuting thoſe labours, which will always be accounted it's glory.

SECT. III.

SECT. III.

His Character, Sickneſs and Death.

THE ancients emblematically repreſented labour as the veſtible to the temple of honour; BOERHAAVE found it really ſo, than whom none lived more laborious, none more reſpected. This was apparent not only from the multitudes, which daily reſorted to him for relief, but from the letters he was continually receiving from all parts of Europe, to conſult him in difficult caſes for perſons of all ranks up to crowned heads; ſo unjuſt was the inſinuation that he had but little experience. Orat. *Boerh.* 1729. p. 9.

The love of liberty and his country induced HIPPOCRATES to refuſe the moſt magnificent emoluments offered him by ARTAXERXES, to reſide at his court in conſort with men of the greateſt abilities, that power and wealth could command from all parts of the world; for the ſame reaſon BOERHAAVE alſo declined invitations

tions of the like nature: inſtead of attending princes abroad, he ſeldom failed of receiving viſits at home from thoſe, who had occaſion to paſs through Leyden; among many perſonages of high diſtinction, two only are mentioned in the funeral oration, but two ſuch princes as every age is not bleſt with; the preſent Grand Duke of Tuſcany, and that genius for civil polity, and univerſal ſcience, PETER the great late Czar of Muſcovy; who did not repent lying all night in his pleaſure barge againſt BOERHAAVE's houſe, in order to have two hours converſation with him on various points of learning the next morning before college time.

What profeſſor was ever attended in his public and private lectures by ſo great a number of ſtudents from ſuch different and diſtant parts, for ſo many years ſucceſſively, with a fame always increaſing? None heard him without conceiving a veneration for his perſon, at the ſame time they expreſſed their ſurprize at his prodigious attainments. In ſhort it may be juſtly affirmed, that none

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in ſo private a ſtation ever attracted a more univerſal eſteem.

Nor was his domeſtic inferior to his public felicity. According to the ancient and laudable cuſtom of the Netherlands he remained ſingle, till his fortune was eſtabliſhed, not making his addreſſes before the 42d year of his age, when he married Mrs MARY DROLENVEAUX, the only child of a burgomaſter of Leyden. The prudence of his choice was confirmed by the event, for their conjugal happineſs continued uninterrupted twenty eight years to the day of his death; of four children, three died in their infancy; JOANNA MARIA the eldeſt ſurvives, heireſs of his fortune and virtues. But that treaſure of knowledge and experience his Adverſaria or common place book he left to his nephews Dr HERMAN and * ABRAHAM KAAU both phyſicians, and to the latter his † anatomical and chemical preparations

* Author of Perſpiratio dicta Hippocrati Anatomice illuſtrata.

† Many of theſe were purchaſed of RUYSCH, and it is believed thoſe gentlemen are willing to diſpoſe of the ſaid Legacies on reaſonable terms.

collected at a great expence. Part of his library, which abounded with many of the beſt hiſtorians, poets, and other authors in polite literature, as well as phyſic, was ſold by auction in June 1739.

He amaſſed greater wealth than ever any phyſician in that country from the practice of phyſic, which was owing as much at leaſt to the frugality of his œconomy, as the largeneſs of his fees; yet he was falſely accuſed of penuriouſneſs, for he was liberal to the diſtreſt, but without oſtentation: his manner of obliging his friends was ſuch, that they often knew not, unleſs by accident, to whom they were indebted; beneficence of this kind, though leſs conſpicuous, is more meritorious; and indeed he was grateful to exceſs, if exceſs can be in virtue: it is however reaſonable to ſuppoſe, that a man temperate by principle and inclination and content without riches, as having no vices to indulge, would, after procuring them with great induſtry and integrity uſe them with diſcretion.

Orat. *Boerh.* 1729. p. 14.

To recount all thoſe amiable qualities, which adorned his character, might be too tedious, as it would be neceſſary to go through the whole catalogue of virtues; but it would be injuſtice to his memory not to touch upon thoſe, which diſtinguiſhed it with peculiar luſtre.

The reputation he gained for learning abroad, was far from being ſullied by the opinion conceived at home in relation either to his principles or practiſe. To refute that ignominious aſperſion, *Religio medici opprobrium Medicorum*, or elſe to vindicate himſelf in particular from the *charge of infidelity* (ſhould not a conſtancy in devotion and an extraordinary pattern of reſignation be thought ſufficient) he left under his own hand a ſketch of his ſentiments in divinity to the following effect. p. 20.

" That he was perſwaded the ſcriptures " as recorded in their orignials did alone in- " ſtruct us in the way of ſalvation and af- " ford tranquillity to the mind, when join- " ed with obedience to CHRIST's precepts " and example; in particular that precept Ap. § 18.

" confirming MOSES's commandment,
" which reſpects the love of GOD and our
" neighbour. He worſhipped GOD in that
" light only, in which he has been pleaſ-
" ed to diſcover himſelf, leaſt otherwiſe by
" adoring an imaginary deity, he ſhould
" prove an idolater. He held the Divine
" Will to be the ſupreme law, which ſhould
" be conſtantly obeyed without preſuming
" to dive into the reaſon of it." His deviating once from this ſtate of ſubmiſſion gave him great concern; when racked with incredible torture for fifteen hours ſucceſſively, he earneſtly prayed the diſeaſe might put an immediate period to his life, and miſery; and upon his friend's ſuggeſting by way of conſolation, that a requeſt ſo circumſtanced was not only natural to human frailty, but precedented by JOB himſelf, he replyed, This maxim however I wiſh to abide by living, and dying, " that
" only is beſt, and alone to be deſired,
" which is perfectly agreeable both to the
" divine goodneſs and majeſty." Conſonant to this truly chriſtian humility was that reflection of his, " many who make
" the

" the greateſt profeſſion of CHRIST's doct-
" rine, pay little deference to his example re-
" commended in one of his firſt precepts,
" *learn of me for I am meak and lowly in*
" *heart.*" He was conſtant in private devo-
tion morning and evening, and through his whole life conſecrated the firſt hour after he roſe in the morning to prayer and mediation, and not only declared he thence derived vigour and an aptitute for buſineſs, but recommended the ſame practiſe to others; to this alone he attributed the conqueſt he had gained over the iraſcible paſſions, when a friend ſeeing him unmoved by great provocations, aſked, whether it was by art or nature he maintained ſuch equanimity? he was as conſtant at public worſhip, as his affairs would permit.

But his piety towards GOD however extraordinary did not exceed his regard to his neighbour, for his tongue and heart correſponded in this his frequent declaration, that " by goodneſs we make the
" neareſt approach to the nature of the
" Deity." This principle reduced into practice was productive of that true forti-

tude of mind, which enabled him to overcome * evil with good, and, inſtead of meditating revenge, to preſerve even thoſe, if ſuch could be, that wiſhed his deſtruction. In a word, his philoſophy was not a ſuperficial decoration, but was intrinſically rooted in the man, a ſecond nature almoſt connate with the firſt.

Although ſoon after his marriage he gradually declined viſiting patients, he was always ready day and night in attending thoſe, who were his patrons or patients at his entrance on practice, or any of their relations. In friendſhip he was ſincere, conſtant, and affectionate; a man more communicative without conceitedneſs, more diſpaſſionate in contending for truth, and more averſe from cenſure, no age has produced. So unmoved was he by detraction, as to ſay, "the ſparks of calumny will "be preſently extinct of themſelves un- "leſs you blow them; and therefore in

* In his preface to the Botanicon Pariſienſe how handſomely he retorts the reflection or rather falſe inſinuation of Mr BERNARD DE JUSSIEU!

"return

"return choſe rather to commend the good "qualities of his calumniators (if they had "any) than to dwell upon the bad." In council and conſultations, no man was more condeſcending and deſirous to cultivate concord; he was more apt to diſtruſt than another to confide in himſelf. In medical conſultations he was remarkable for his addreſs towards ſenior phyſicians, and his courteſy to the reſt. He never made his own works or affairs the ſubject of diſcourſe, and his reply to any queſtion concerning them manifeſted a regard ſolely to the benefit of the enquirer, without ſounding or ſeeking his own praiſe, whilſt his good nature often led him to exceed in the praiſe of other authors. In the adminiſtration of juſtice, as during his rectorſhip, he had no reſpect of perſons, nor was ever awed into unworthy compliances by the frowns of the great; he was modeſt without meanneſs, and ſteady without rudeneſs. He held conſcience the ſupreme court of judicature, and neither ſwerved from juſtice himſelf, nor connived at any deviation in others.

When he heard of a criminal condemned to die, he inculcated the reflection, "may
Ap. § 18. "not this be a better man than I? if "otherwiſe the praiſe is not due to me, "but to the grace of GOD." By the venerableneſs of his countenance blended with ſweetneſs, by lenity without ſoftneſs, and by an acquaintance with the civil law, the law of his country, he was an ornament to magiſtracy itſelf; extraordinary was his ſagacity in diſcovering the genius and diſpoſitions of men, as well as their diſtempers, at firſt ſight, which might contribute to the knowledge he had of mankind, much ſuperior to what is uſually attained without travelling, or ſpending more time in converſation; wherein, as in teaching, he had the faculty of being conciſe and yet clear, copious and not prolix, adding graceful embelliſhments to what he delivered, but left the company, inſtead of leading it, to mark the beauty of them. He always retained that innocence and ſimplicity of manners, which uſually accompanies a greater converſe with books than men, without the leaſt

leaſt of that moroſeneſs, which is the frequent conſequence of a ſeceſſion from ſociety for ſtudy in that ſtage of life, when the temper is formed. Philoſophy it ſelf does not exclude pleaſantry, but the fond partiality of ſuch as value only, what makes the diſtinguiſhing part of their own character. In his youth he was not averſe to gaiety; afterwards, that natural turn to the polite kind of irony ſo much admired by the ancients in SOCRATES, as equally delicate, and innocent adding a reliſh to gravity, that facetious, and yet genteel humour enlivening the wit of others diſcreetly intermixt even with ſerious ſubjects, rendered his converſation no leſs entertaining, than inſtructive. In his lectures he has occaſionally excited laughter in the whole audience without the alteration of one muſcle in his own face; his action in delivering himſelf was ſo expreſſive, that he was frequently underſtood by it, when a difference of pronunciation would otherwiſe have left paſſages unintelligible to ſome foreigners; and being without the leaſt affectation, it

ſeemed

ſeemed the gift of nature, rather than the acquiſition of art. His manner of explaining things, which was ſimple, methodical and exact, as well as the dignity of his matter, encouraged the reſort of ſuch numbers of foreigners (ſtudents in medicine) to that univerſity.

He converſed in the Engliſh, French, and German languages, and read the Italian and Spaniſh with ſuch facility, that few or none of the new diſcoveries in philoſophy or phyſic written in thoſe languages eſcaped him. The Latin he ſpoke extempore in lectures or converſation was ſo remarkably clear, that with his action, method, and the aptneſs of his ſimiles, he could level the moſt abſtruſe points to the meaneſt capacities, one of the certain indications of a great genius. Many are able to reach the ſummit of a ſcience themſelves, who are not capable of leading others to it; and indeed in ſome caſes there is more difficulty in deſcending to teach others, than in perſiſting to aſcend by one-ſelf; but he ſo compleatly executed his ſeveral undertakings, that his pupils, inſtead

inſtead of having reaſon to complain of any defects, have obſerved, that many expreſs treatiſes upon the various ſubjects he diſcuſſed, appear after him ſo ſuperficial, as ſcarcely to merit their peruſal. It was his manner to lead perſons to thoſe ſubjects of converſation they were beſt acquainted with, whence he derived ſuch inſtruction, that ſeveral expert artificers were ſuprized at his having penetrated further into their own art than themſelves; for the loweſt mechanic arts furniſh a vaſt number of uncommon and ſurprizing experiments well worthy a philoſopher's attention; ſome were the invention of ingenious, but unknown authors; others accidentally ſtumbled upon by the meaneſt artificers, who never dreamt of philoſophy, nor any thing elſe but their own immediate advantage; yet theſe contribute as materially to the compoſing a natural hiſtory, as archives to civil hiſtory, and are juſtly ſtiled the anecdotes of nature, which alone are preferable to any ſyſtems of philoſophy formed without

without them *: his readineſs at making curious deductions from common occurrences delighted every one that converſed with him; as if educated under the Pythagorean diſcipline, he became not leſs uſeful as a Citizen, than eminent as a Scholar. He never neglected academical buſineſs, eſpecially that of lectures; and could not be tempted by the largeſt fees to attend patients at college hours: in ſhort from an impartial ſurvey of his whole character it appears to have been his grand concern to anſwer the utmoſt expectations from him, both in his public, and private capacity.

BOERHAAVE was naturally of a robuſt frame and healthy conſtitution, early inured to conſtant exerciſe, and the inclemencies of weather, whence he acquired a very uncommon ſtrength of body; no man could have a fairer proſpect of longævity; but he, who was temperate in every thing except application, ſacrificed to li-

* The late Mr CHAMBERS has given a moſt valuable and ample collection of theſe in his Dictionary or Cyclopœdia.

terature

terature in all probability a fourth of his days; yet on this account he may truly be ſaid to have died at ſeventy, older, than another at an hundred. His ſtature was rather tall, and his habit corpulent, having always had a great appetite, which he indulged at dinner only; water was his common drink, till towards the decline of life, when he exchanged it for moll a liquor like our oat-ale; as to wine, he rarely did more than taſte it in complaiſance. It coſt him much more to nouriſh his mind, than his body. He was negligent of dreſs, and in his gate and deportment there was an honeſt and ſomewhat awkard ſimplicity, but yet accompanied, which is very rarely ſeen, with a diſtinguiſhable dignity. He had a large head, ſhort neck, florid complexion, light brown curled hair, (for he did not wear a wig,) an open countenance, and reſembled SOCRATES in the flatneſs of his noſe, and his natural urbanity. His eyes were ſmall, but very lively, and piercing, the print prefixt bears a near reſemblance. A chearful ſerenity dwelt in his countenance,

agreeing

agreeing in this reſpect alſo with the wiſe Grecian's, that it never ſeemed much elated by joy, nor depreſſed by ſorrow, an indication of that tranquillity of mind, which is the agreeable attendant and guard of virtue.

The mornings and evenings he devoted to ſtudy, the intermediate part of the day to domeſtic and public affairs. He uſed to riſe during ſummer at four in the morning, and at five in the winter, even in his later years; ten was his uſual bed time. In the ſevereſt winters he had neither fire nor ſtove in his ſtudy, where he paſſed the three or four firſt hours of the morning: his application to ſtudy was greater in the laſt ten years of his life, than in any ſpace of equal duration from the year 1700. When buſineſs was over, he took the exerciſe of riding or walking, and when weary revived himſelf with muſic his moſt delightful entertainment; being not only a good performer on ſeveral inſtruments, particularly the lute, which he accompanied alſo with his voice, but a good theoriſt likewiſe in the ſcience, having read the ancient

ancient and beſt modern authors on the ſubject, as appears by the lectures he gave on ſound and hearing; and during the winter he had once a week a concert at his own houſe, to which by turns were invited ſome ſelect acquaintance of both ſexes, and likewiſe patients of diſtinction from other countries.

In the latter part of his life his chief pleaſure was in retiring to his country ſeat, where he had a garden of near eight acres, enriched with all the exotic trees and ſhrubs, he could poſſibly procure, that would flouriſh or live in that climate and ſoil: ſo intent was he upon ſtocking it with the greateſt variety, that he ſtiles a preſent of American ſhrub ſeeds, "mune-"ra auro cariora"; gifts more precious than gold: and that of two cedar trees "regali beare dono" a royal benefaction. Thus the amuſement of his youth and later years was of the ſame kind; the cultivation of plants; an employment coæval with mankind, the firſt to which neceſſity compelled them, and the laſt to which, wearied with a tireſome round of vanities they

they are fond of retreating, as to the moſt innocent, and entertaining recreation; certain it is, in the vegetable kingdom we are furniſhed with the greateſt variety; but what redounds not leſs to it's praiſe, the culture of it ſeems to have introduced us into all other knowledge: It concerned huſbandmen to obſerve the motions of the celeſtial bodies, to meaſure the heavens and the earth, to ranſack the bowels of the latter for metalline oar to ſupply more uſefull inſtruments for agriculture; whence probably the origin of aſtronomy, geometry, and metallurgy. But to return; the manſion in the middle of his garden, though large, was more eligible for convenience, than grandeur; a poſſeſſion this, which is generally the ultimate ambition here of the truly great and good, particularly of thoſe, who have conſumed their active days in the ſervice of mankind, whether ſoldier, ſtateſman, or philoſopher; happieſt of mortals; could he, who was ſo capable of improving retirement, but have enjoyed it unmoleſted in this choſen ſpot alike commodious for contemplation,

templation, and buſineſs of that ſort, from which the world and his own mind would have reaped equal advantages; for the buſieſt man, as Mr Cowley obſerves, has not more employment in public, than a philoſopher in private; the one may have the weight of a nation, the other of all nature upon his hands, but with this difference, that the philoſopher poſſeſſes moſt private happineſs himſelf, whilſt he occaſions the moſt public happineſs by a free communication of his diſcoveries to all the world.

But from this pleaſing ſcene our eyes muſt now be turned to one of horror; it is no ſmall mortification to find, that even this ſuperlative pitch of virtue and knowledge, which one in a million, who aſpired after it, would hardly attain, will not ſecure the body from the ſevereſt tortures it is capable of enduring: In the middle of Auguſt 1722, by expoſing himſelf to the morning dews before ſun riſing, Boerhaave was ſeized with excruciating arthritic pains, which at length terminated in a paralytic affection, depriving him al- Ap. § 19.

moſt of the ſenſe of feeling, and entirely of the power of moving his lower limbs, inſomuch that he was obliged to lie whole months on his back without attempting to turn himſelf, becauſe of the acute pain threatned upon the leaſt inflection. What moſt diverted theſe torments, which kept him awake many nights and days ſucceſſively, was the review of thoſe treaſures of ſcience repoſited in his memory. There never was a perſon poſſeſt of a more tenacious memory with ſo ſound a judgment. Conſul SHERRARD declared his aſtoniſhment at the following inſtance; whilſt he was with BOERHAAVE, a viſitor entered, who excelled only in an acquaintance with the Spaniſh poets; our profeſſor who ſucked honey from every flower, ſoon turning the converſation to that topic, repeated a page or more out of one of their celebrated authors, which he afterwards aſſured the Conſul (upon expreſſing ſurprize at his finding time to converſe with ſuch Books) he had not looked into for twenty years paſt. Unleſs in chemiſtry, and his public lectures, he uſed no notes, and could by dint

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of memory quote not only authors, but frequently the very pages and ſections, introducing, on all occaſions, eſpecially in botanical lectures, the beautiful deſcriptions of the poets, particularly of * VIRGIL, OVID, RAPIN, COWLEY, nay could even repeat ſome whole chapters of VAN HELMONT almoſt verbatim. But to return from this digreſſion. After languiſhing five months without any relief, by the plentiful uſe of the expreſt juices of the lacteſcent, and pappeſcent plants chiefly, aſſiſted with the ferulaceous gums, he wonderfully recovered, and opened his private college again January 11, 1723. The evening was celebrated with public rejoycing and illuminations.

About the end of 1727, he was attacked by ſo violent a fever, that he not only with difficulty ſurvived, but ſuffered much from it ever after; and was obliged to reſign the two profeſſorſhips abovementioned, p. 44.

* He was a great admirer of HOMER, but was charm'd with VIRGIL, and indeed ſo good a maſter of the Claſſics, as to be conſulted by the greateſt critic of his country about the ſenſe of paſſages in them relating to natural hiſtory.

yet he was not leſs aſſiduous in his private labours, till the prelude of his fatal illneſs in the middle of the year 1737; when a difficulty of breathing firſt ſeized him, and afterwards gradually increaſed. In a letter to Baron BASSAND recommending his learned friend Dr LAWSON to his acquaintance, he ſubjoins the following ſtate of his own indiſpoſition. "An im-

Ap. § 24.

"poſtumation of the lungs, which has "daily increaſed for theſe laſt three months, "almoſt ſuffocates me upon the leaſt mo- "tion; if it ſhould continue to increaſe "without breaking, I muſt ſink under it; "if it ſhould break, the event is ſtill du- "bious; happen what may, why ſhould "I be concerned, ſince it cannot be but "according to the will of the Supreme "Being, what elſe ſhould I deſire? God "be praiſed. In the mean time, I am "not wanting in the uſe of the moſt ap- "proved remedies in order to mitigate the "diſeaſe by promoting maturation, no "ways anxious about the ſucceſs of them; "I have lived to upwards of ſixty eight "years, and always chearful."

"Finding

"Finding alſo unuſual pulſations of the "artery in the right ſide of the neck, and "intermiſſions of the pulſe, he concluded "there were polypous concretions between "the heart and lungs, with a dilatation of "the veſſels." And September the 8th 1738, he wrote his caſe as follows to Doctor MORTIMER, Secretary of the Royal Society. Ap. § 20.

"It is a year ſince age, application, and "immoderate fatneſs have produced an "utter ineptitude to any kind of exerciſe "in ſuch a heavy corpulent body, full of "inert humours, and upon the leaſt mo- "tion gaſping for breath, with a pulſe "ſtrangely irregular; but the moſt ur- "gent ſymptom was the interruption, or "ſtoppage of reſpiration on falling aſleep, "and the prevention of any reſt by a ſud- "den terrible ſenſation as of ſtrangling. "Upon which the abdomen and all the "parts below it became dropſical; but "notwithſtanding the removal of theſe "ſymptoms, there remain pain of the "belly with great weakneſs and anxiety, "a ſuffocating aſthma, ſhort are my ſlum- "bers, diſturbed with dreams, the mind is Ap. § 24.

" incapable of any buſineſs; wearied with " this conflict I gain no releaſe, yet patient- " ly wait the divine pleaſure to which I " am wholly reſigned."

His manner of ſuſtaining his miſery yeilded an example of the moſt exalted and difficult uſe, to which reaſon and faith can be jointly applied.

During the inexpreſſible ſeverity of this diſeaſe, he intimated to a particular friend, that he had a more ſenſible or experimental conviction and certainty of the diſtinction between thinking and material natures, and alſo a livelier perception of the inexplicable union of ſoul and body, than was attainable by meer meditation and philoſophizing, as if not otherwiſe procurable than by long ſickneſs. If this be thought to ſavour of enthuſiaſm, yet it muſt be acknowledged, that to nothing leſs than the higheſt reach of piety, philoſophy, and virtue, can be attributed that invincible fortitude of mind, which not only ſupported him with the patience of a heroe or a ſaint, even without repining, for many months under ſuch torments, as

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to make his beſt friends wiſh for an immediate deliverence (as no other could be expected) by death, but enabled him at the ſame time by lenient diſcourſe to ſooth their affliction; that philoſophy, which had ſo well inſtructed him how to live, taught him the art of dying alſo.

About the end of Auguſt for ſome days there were flattering hopes of his recovery, which ſoon vaniſhed, and he declined to the 23d of September; when ſtill maintaining a ſerene compoſure, as if inſenſible of any uneaſineſs, betwixt the hours of four and five in the morning he expired, wanting but three months and eight days of ſeventy.

How extenſive muſt be the concern for ſo irreparable a loſs? not only his friends and pupils, the univerſity and city of Leyden, but the republic of Holland and of Letters are ſtruck with undiſſembled ſadneſs; and certainly the death of one man can never give a juſter occaſion for it, than when a perſon formed by nature for great deſigns, proſecuting them with a generous ardour, conducted by ſuch prudence

in

in executing them as that they rarely prove abortive, is cut off before thoſe purſuits are finiſh'd, in which he alone was likely to have ſucceeded, and the ſucceſs of which would have conduced ſo much to the benefit of mankind. In ſhort, not one whom BOERHAAVE's fame had reached, and whom had it not? if his own welfare was his care, and his caſe and circumſtances would have permitted conſulting him, can forbear to participate very ſenſibly of this general ſorrow.

But in vain we reflect on what is irrecoverable; better were it to improve thoſe remains in which he may be ſaid ſtill to ſurvive, and ever will as long as diſeaſes exiſt, whilſt philoſophy and phyſic are cultivated. Happy would it be for Europe, could he be ſaid to live in thoſe diſciples alſo, who from his ſchool, as the grand ſeminary of medical ſcience, have been tranſplanted into the ſeveral regions of it; or even in thoſe ſurviving profeſſors who were his worthy Colleagues, OOSTERDYK, ALBINUS, VAN ROYEN, and GAUBIUS, (the three laſt were educated under him) concerning

concerning whom juſt before his death, he thus expreſt himſelf to the Curators of the Univerſity on their conſulting him about the affairs of it.

"I congratulate you upon leaving the Ap. §23.
"Univerſity in ſo flouriſhing a condition,
"with ſuch an ample fund for the ſciences,
"but in particular for the eſtabliſh-
"ment and augmentation of medicine,
"and raiſing it to the higheſt degree of
"dignity and uſefullneſs; which doubtleſs
"will be effected by the concurrence of
"the preſent four profeſſors of phyſic, in-
"diſputably men of the firſt rank in their
"reſpective provinces; under ſuch preſi-
"dents the Hippocratic ſchool may pro-
"miſe it ſelf perpetual honours and in-
"creaſe."

A ſummary view of the character of our great phyſician is given by an impartial hand. * "This great man is departed to "the irretrievable loſs of philoſophy and "phyſic:

* The tranſlator of the Tranſactions of our Royal Society into French, by way of note to BOERHAAVE's laſt paper on Mercury, 1736, N° 434. p. 242.

" phyſic: Long was he the oracle of his
" faculty, and the phyſician of all Europe;
" never was preceptor more beloved, pro-
" feſſor more celebrated, nor phyſician
" more conſulted; he arrived to an emi-
" nence in all the ſeveral branches of me-
" dicine, had the glory of teaching them
" with equal applauſe, and the happineſs
" of ſeeing himſelf admired without being
" obnoxious to *the effects of* envy or to any
" *diſparaging* contradiction; inſomuch
" that he was never mentioned by the
" greateſt of his cotemporaries, but with
" encomiums. His ſole authority with-
" out the ſupport of arguments was ad-
" mitted as deciſive. He was not leſs ſuc-
" ceſsful in practice, than learned in theo-
" ry, and is therefore ſtiled the Batavian
" HIPPOCRATES: The qualities of his
" mind have rendered him ſtill more amia-
" ble, than thoſe of his underſtanding. He
" was a ſure patron to men of learning
" and genius, employing his own reputa-
" tion as it were wholly for their ſervice."
We may add, he was a man of a vaſt com-
prehenſion, profound judgment, prodigious
memory,

memory, ſolid experience, and unparallel'd modeſty. His religion, though ſtrict, was rational; he ſought truth conſtantly, eſpouſed it zealouſly, and on his labours mankind may ſecurely rely; he was faithful and civil to his very enemies; his ſkill not only in philoſophy and phyſic was reverenced by all who excell in thoſe ſtudies, but his attainments in other learning excited admiration. His knowledge had a right influence upon the temper of his mind, which was endowed with all the humility, benevolence, fortitude, and ſincerity of a ſound and unaffected philoſopher. To conclude our account of his life with the words of a very polite Biographer, "This is ſpoken not of one "who lived long ago, in praiſing of whom "it were eaſy to feign, or to exceed the "truth, where no man's memory could "confute us; but of one, who is lately "dead, who has many of his acquain-"tance ſtill living, that are able to "confirm this teſtimony, and to join with "us in delivering down his name to poſte-"rity, with this true, *though imperfect* cha-"racter of his learning and virtues." Hiſt. R. S. p. 189.

A N

AN ACCOUNT OF THE WRITINGS OF Dr *H. BOERHAAVE*.

PART II.

SECT. I.

Of two Orations, the one relating to Theory in general, the other to the Practice of Phyſic.

THE digreſſions in our former part would have too much interrupted the narrative of Dr BOERHAAVE's life, had the interſperſed extracts from his orations (calculated for a mixt audience and therefore for the generality of readers) been more

more numerous or prolix. There are two orations well deſerving the conſideration of the philoſopher and phyſician, of which very little mention has been already made; p. 31, 34. as the one may ſerve for a ſpecimen of his ſentiments and manner of diſcourſing on philoſophy including phyſiology, and the other on the practice of phyſic, and as together they afford a compendious view of the ancient, modern, and true ſtate of both ſciences, the following abſtracts of them can be no improper introduction to the account of his larger writings.

The ſubject claiming priority, we begin with that delivered in 1715. *Diſſertatio de comparando certo in phyſicis*, his Diſſertation on obtaining truth or certainty in philoſophy, or the knowledge of nature. p. 34.

It was his deſign here, to ſhow the vanity of attempting to inveſtigate the cauſes of things, or to ſolve the uſual appearances in nature by the meer ſpeculation only of the acuteſt geniuſes, and to expoſe their preſumption in deſcribing the *principles* or primary conſtituents of things, which, ſince they

they never could be ſubjected to any experiments, being ſo minute as to eſcape all obſervation, have ever eluded our niceſt ſcrutiny.

Thoſe are underſtood to be *principles*, from which by a neceſſity inſeparable from their exiſtence proceed all the changes in the univerſe. That ſome ſuch exiſt is as certain, as are the changes apparent in bodies. But what they are is as inſcrutable, as any thing whatſoever. Before a man can truly pronounce himſelf acquainted with theſe principles, he muſt neceſſarily be poſſeſt of ſuch ideas, the contemplation of which may preſent him with all things which ever were, which are, or ſhall be; for all this flows from underſtanding the nature of a true principle; and leſs than this demonſtrates the pretender to have embraced only the ſhadow of it; ſince he who comprehends the nature of a cauſe muſt perceive all things contained in it, and how they reſult from it, every cauſe operating from the efficacy of its own nature, which whoever rightly apprehends, muſt likewiſe perfectly know

all

ll its effects, as virtues peculiar to it; juſt s a ſkilfull mechanic upon duly conſider- ng the wheels, ſprings, or weights of a lock, readily conceives the periods of the evolutions of the ſeveral wheels, and the arious motions that muſt enſue.

But waving arguments of this kind let s appeal to facts, and examine what the greateſt philoſophers have contended for as eal principles. The moſt ancient of them, hoſe of Syrophœnicia, held for principles roductive of all natural appearances chief- y theſe three, *Atoms*, *Space*, and *Gravi- tation*. This doctrince thence derived and eceived by LEUCIPPUS, DEMOCRITUS, METRODORUS of Chios, EPICURUS, LU- CRETIUS, and their followers, was poliſhed by GASSENDUS, but being afterwards ex- ploded by DES CARTES, it was in diſ- grace during the prevalence of his ſect; neverthelefs it reviv'd, and is eſtabliſhed ince to much greater advantage by the in- vincible demonſtrations of that Prince of ll philoſophers Sir ISAAC NEWTON: But yet, whatever is known of the nature of theſe very principles, is learned only rom their obvious effects. By

By an *Atom* is meant a corpuſcle too ſmall to affect the ſenſes, which conſiſts of particles cohering ſo firmly, as to be inſeparable by the active force of any bodies whatſoever. *Atoms* therefore are elements of a conſtant figure and dimenſion: But how are we apprized of their exiſtence? by conſidering, that although bodies continually vary their external form, and revert to their ancient chaotic ſtate, yet ſince after ſo many thouſand years the fabric of the univerſe ſeems to be much the ſame, this concluſion follows, that there muſt be ſome immutable elementary particles, which by their various conjunction produce various bodies, whoſe diſſolution can extend no further, than into thoſe component particles. Nothing therefore is generated from new matter, but every thing ſeemingly new is only regenerated; compounds are changed, whilſt their elements remain indiſſoluble. Nothing more then is known of an Atom, than what ſenſe teaches; for it is not learnt by reaſoning *a priori* to be an individual, impenetrable, *&c.* but neceſſarily deduced from

effects

effects or obſervations of the nature of things, as from the colliſion of bodies, *&c.* and an unknown cauſe is ſuggeſted to account for ſuch effects, as are thought moſt likely to proceed from it.

Nor have they ſucceeded better, who eſtimate the nature of bodies from *extenſion* or *ſpace* only, for from thence the diverſity, reſiſtance, and other properties of bodies cannot be accounted for: All would be alike impervious, immoveable, immutable, infinitely extended every way, without the variation of reſt and motion; whoever throughly conſiders this will be far from finding, that he can deduce the nature and mutation of bodies from his idea of pure extenſion; how much ſoever ſeveral great men might at firſt have favoured this preſumption, they at length frankly acknowledged the vanity of it, particularly HUYGENS, LEIBNITZ, and NEWTON.

Altho' *Gravitation* was according to the moſt ancient philoſophers ſuppoſed proper to Atoms, and to appearance is inſeparable from them, always under the

ſame laws, and increaſing in proportion to the increaſed quantity of matter, yet the moſt ſagacious philoſopher knows no more what Gravity is in bodies, in reſpect either of its nature or origin, than he who has once examined it only by his ſenſes: All that is underſtood of it is from experiments, and all the excellent diſcoveries of ARCHIMEDES, PAPPUS, GALILEO, TORRICELLI, DES CARTES, HUYGENS, VARIGNON, BERNOUILLI, and Sir ISAAC, have been no more than a deſcription of the laws, properties, and effects of gravitating bodies. Nor is *Attraction* better underſtood as to its cauſe, nor *Motion* of any kind, and therefore none of theſe are to be admitted as *Principles*.

But ſetting aſide the doctrine of Elements and Motion, other cauſes are employed for generating effects, the knowledge of which moſtly reſpects human uſes, *viz.* *Stamina*, or rather the *Seeds* of things of nature ſufficiently durable and inimitable by any art; whoſe contexture ſerves as baſis to the production, growth, action, preſervation, and propagation of every ſpecific

ſpecific body. Theſe ſeeds have been always and every where alike; let theſe be ſupplied with the ſame aliment, however foreign it may ſeem to their ſeveral natures, yet aſſiſted by moiſture and warmth, it will aſſume a form peculiar to each reſpective body, whether metalline, animal or vegetable, and ſuch an one, as no human invention can frame or effect any other way, than by the aſſiſtance of the ſeed, let the body be ever ſo ſimple, or the artiſt ever ſo ingenious: almoſt all the appearances of nature, which ſo much exerciſe the diligence of philoſophers, are derived from the ſeminal principles: for nothing can be more ridiculous, than to attribute the generation of ſuch uniform organical productions as ſeeds, to the fortuitous concourſe of elementary particles; much more agreeable to nature is the moſt ancient theory of the origin of things from eggs, ſo judiciouſly repreſented by DRELINCURT, by him confirmed in an elaborate detail of inſtances, as well as by HIPPOCRATES, MERCURIALIS, HARVEY, MALPIGHI, SWAMMERDAM,

DAM, GRAAF, and GREW; and afterwards improved by LEWENHOECK's diſcoveries of the rudiments of animals contained in the male ſperm, with which thoſe eggs are impregnated. This doctrine has ſince been eſtabliſhed in regard to vegetables, and ſome ſuch manner of impregnation is by conſummate adepts extended to foſſils: In ſhort, all the European philoſophical tranſactions corroborate this ſyſtem. But how inconceivable is the endleſs fecundity of one prolific grain of muſtard ſeed! in which were included from time immemorial the embryos or effective delineations of all the plants which have ſprung from that ſeed, and from their ſeed, *&c.* to the preſent time, and which ſhall ſpring from them, whilſt the world laſts, all poſſeſt of the ſame nature, form, and ſtructure, ſubject to like viciſſitudes in reſpect of their origin, growth, operation, propagation, decay and diſſolution. How ſingular is the efficacy of this ſeminal virtue! Sow the ſeeds of Colocynth and Caſſia of the deleterious Aconitum and of Antithora its antidote in the ſame fertile

fertile ſoil, and ſupply them with the ſame water, how different juices they afford! nay, how much do the juices vary in the diſtinct part of the ſame plant, and how ſimilar are they in correſponding parts! the like is obſervable in all animals alſo. From hence the concluſion is evident, that the origin, ſtructure, and virtues of particular concretes argue the preexiſtence of like bodies, from whence they were produced: That ſuch ſimilar bodies do not depend on any univerſal principles, but each has a nature peculiar to it ſelf, as indefinitely various as are the forms of bodies, and therefore not otherways cognizable than as they are particularly diſcloſed by experiment the faithfull interpreter of nature. This is more juſtly and nervouſly repreſented by MOSES than by all other philoſophers, "Let the earth "bring forth plants having their ſeed in "themſelves *reſpectively* after their kind."

But leaving this intricate ſpeculation of ſeminal principles, let us examine only, what is eſteemed the moſt ſimple part of an human body, a ſingle *hair*. More than

the age and induſtry of any one man would be requiſite to inveſtigate the compleat ſtructure of this ſo trivial a thing, ſince the care and apparatus concerned in bringing it to perfection, is not leſs than is neceſſary to form the moſt ample and exquiſite machine.

Conſider with what ſollicitude its bulbous radicle of artificial texture is placed in the ſoft fat under the tough ſkin, alike defended from injuries and incapable of injuring. This bulb is framed by the delicate contexture of innumerable veſſels, which with inexplicable diverſity form the tender but durable membrane of this hair. Conſider the multitude of capillary arteries and veins tending thither; the ſpiral convolution towards the extremities of the ſubcutaneous nerves, how they riſe into ſoft, mucous, and almoſt diffluent *papillæ*, the organs of the ſenſe of touch, with what amicable and inſeparable connection incorporated with the aforeſaid veſſels they concur to the ſtructure of the ſaid membrane, penetrate into its hidden receſſes, where rooted and fixt they

furniſh

furniſh the firſt *ſtamina* of the ſprouting hair. Thus far the work has proceeded in a *Fœtus* and even in an Embryo. This bulb is ſupplyed with different humours by thouſands of different veſſels, and the extremities of ducts tending from all points towards a centre form ſoft and ſucculent roots, which connected by very ſmall veſſels, and firmly implanted in the membrane, are moiſtened and endued with acute ſenſe: then from the fine fibres looſely diſperſed before, and now united more cloſely, the condenſed trunk ariſing, becomes harder, dryer, ſmaller, and protruded beyond the ſphere of its receptacle, finds a pore in the ſkin open for its egreſs, and receives from the ſkin a ſheath, to which is owing its colour and firmneſs; after the impelled hair has raiſed the ſcales of the *cuticula*, receiving from them an outward coat, it paſſes on through the pore into the air, by which the moiſture being diſſipated it drys, hardens, loſes all ſenſation, and is propelled to ſuch a length, as the part, where it grows, and the uſes, for which it is deſtined, require.

Let

Let us now examine an hair ſhed, or ſeparated from the body, apparently ſo ſimple. Large hairs through a microſcope are obſerved to conſiſt of diſtinct fibres with a cavity (diſcoverable upon biſſection) wherein is contained a medullary ſubſtance. Beſides we learn from diſeaſes that they are compounded from their ſplitting ſometimes into many fibres, ſometimes entangling inextricably, ſweating humours of various colours, and when their exit through the ſkin happens to be intercepted, they coil themſelves up, conglomerate, and appear like little worms producing elevations, or tubercles, and uncommon ulcers. Further by chemiſtry a quantity of hair affords water, oil, volatile ſalt in great plenty, and a ſpirit more acrid than from any other part of the body. Thus by the ſucceſsful diligence and ſagacity of MALPIGHI, RUYSCH, CHIRAC, and LEWENHOECK, by the comparative anatomy of plants and animals, by the hiſtory of diſtempers, to which the hair is ſubject, and by other helps we have ſhadowed out ſo much of the ſtructure of this ſmall and

and to the naked eye ſimple part. But yet how much is wanting? for can the nature of an hair be underſtood unleſs that of a nerve be known? and the nature of this, without that of all the other parts of the body, and eſpecially of the aliment or humours which ſupport their growth. Thus, as HIPPOCRATES remarks, the animal œconomy is like a circle, in which neither beginning nor end are diſcoverable.

Now, what force of genius could have ſuggeſted all that relates to this ſingle hair from imagination only? Not the ſkill of all the naturaliſts and phyſicians can reſtore one hair radically extirpated, nor alter the growth nor colour of any one by principles conceived *a priori*. What then is clearly apprehended from their univerſal principles in relation to the whole body, and to the univerſe? Such is the wiſdom exhibited by nature in the meaneſt ſubjects, that let but one of the many apt and ſimilar inſtruments ſhe uſes, or the order of their diſpoſition paſs unobſerved, and the philoſopher will be quite at a loſs in explaining any of her operations; in which

which no time is loſt, no unneceſſary ſtep is ever taken, but every thing is effected the ſhorteſt way, and with conſummate art.

Laſtly, let us conſider their ſucceſs, who from hypothetic principles have endeavoured to explain the *phænomena* of nature. Conſult the ſchools of Greece and Italy; they differ upon almoſt every thing from one another, and among themſelves alſo, even in conſtituting their very principles; THALES who was verſed in the Egyptian *Arcana*, as well as in thoſe of Aſia is corrected by ANAXIMANDER, this by ANAXIMENES, and although ANAXAGORAS improved upon the laſt, he eſcaped not the cenſure of ARCHELAUS. At length that wiſeſt of the heathens SOCRATES perceiving the vanity of ſuch ſpeculations, applied himſelf chiefly to moral philoſophy. But PLATO could not refrain from blending his hypotheſis about principles with the doctrine of his preceptor, on which account he incurred the reiterated reproofs of ARISTOTLE; and even this great man after a long

long reign, has been dethroned by the chemiſts, Lord VERULAM, and DES CARTES. Nor did the chemiſts or Carteſians tyrannize longer, than till philoſophy was ſo fortunate, as to fall into the hands of thoſe, who reaſoned mathematically upon faithful experiments only. As to DES CARTES it is hardly credible, that ſuch excellent mathematical treatiſes, as thoſe on geometry and dioptrics, and ſo different performances on phyſics ſhould proceed from one and the ſame author; and the like difference is obſervable betwixt the mathematical writings of HUYGENS, and his *Coſmotheoros*, wherein he indulges imagination. Thus it has happened with others alſo, but the mention of two ſuch men is ſufficient.

Yet there is no reaſon to conclude that Pyrrhoniſm muſt be the conſequence of our doctrine; for the Sceptics did not ſuſpend their aſſent from a diſtruſt of fallacy in *obſervations*, they only condemned the wild licentiouſneſs of *aſſuming principles* for *explaining* obſervations; whilſt SOCRATES and the wiſer Academics held accurate

curate obſervation to be the genuine voice of nature, and that ignorance and errors about her proceed from a raſh aſſumption of principles.

In ſhort, all the improvement made in philoſophy, except that from meer experiments, is owing to mathematical reaſoning upon them. Geometricians have aſſumed no principles in relation to the nature or motion of bodies, but what are manifeſt to every one, and nevertheleſs have obliged us with the moſt certain and uſeful diſcoveries; for whatever increaſe has been gained in the hiſtory of nature ſince the beginning of the 16th Century to this very time, it muſt be acknowledged, * we are entirely indebted to the precepts and experiments of the great Sir FRANCIS BACON, of whom it is difficult to ſay, whether he was more ſucceſsful in the reſtauration of diſtreſt philoſophy by his admonitions or example, his labours or liberality.

And

* This is ſufficiently ſhown by Dr SHAW, in the notes to his edition of Lord VERULAM's philoſophical works, in 3 vols. 4to.

And now, from the diſclaiming of Sects, and from the inſtitution of philoſophical ſocieties for experiments throughout Europe, what numerous diſcoveries have been already made! what may we not expect?

The other ORATION relating to the *Practice* of *Phyſic* before mentioned, is entitled, *Oratio, qua* repurgatæ Medicinæ *facilis aſſeritur* ſimplicitas. A vindication of the *plain ſimplicity* of *Medicine*, when diveſted of what is *foreign* to it. This is learnedly proſecuted by the following ſteps. p. 31.

That great is the ſimplicity of naked truth, not only mathematicians, but all who have treated things ſcientifically in any branch of human knowledge abundantly teſtify. ÆSOP, SOCRATES, DEMOCRITUS, Lord VERULAM, DES CARTES, who devoted themſelves to the ſearch of truth, excel in point of *ſimplicity*. Indeed in every reſearch ſimplicity is both the road to truth and the characteriſtic of it; nor is it leſs ſo in the caſe of phyſic, when cultivated with ſtrict purity, than of other ſciences, notwithſtanding ſo many by pretending it to be a ſtudy of immenſe labour

labour, have ſometimes drove even the diligent to deſpondence.

It muſt be granted, thoſe things only relate to medicine, which have a tendency to preſerve life and health, or to remove diſeaſes; 'tis commonly believed, their number is infinite, and concluded therefore that our ſcience muſt be the moſt extenſive, and difficult of any: But whoever diſcriminates fallacies, and doubts from certain truths, and rejects the former, will find the rules of the art thus rectifyed, to be not very numerous. Diſcretion forbids the preſumption of any thing in phyſic, the truth of which a ſkillful practitioner has reaſon to ſuſpect; this is not more effectually guarded againſt, than by avoiding what is peculiar to ſects; nor is truth more readily diſcovered, than by admitting only what all proper judges allow; a maxim which reduces what properly belongs to medicine into a narrow compaſs; for upon examination we ſhall find, that moſt medical writers are plagiaries in what they have delivered conformable to this maxim; that moſt of the indiſputable

putable truths, they contain, have been copied from HIPPOCRATES; and that if all errors and idle jargon, were expunged from the works under HIPPOCRATES's name, few certain tenets would be left, and thoſe very ſimple: Diſcard what relates to elements, ſympathy, antipathy, innate heat, celeſtial influences, anatomical errors, with all that depends thereupon, which ſwell thoſe works to ſo great a bulk; what remains? But a ſmall collection of obſervations not very remote from our ſenſes, nor ſuperior to our comprehenſion.

With what a multitude of books has PLATO and his ſect loaded the ſcience? But beſides learned harangues on triangles, numbers, ideas, elements, humours, genii, appetites, harmonies with myſterious allegories, and as many falſe corollaries ſubjoined, what is there *doctrinal* except the little divulged by HIPPOCRATES before him? The ſame may be alledged againſt his diſciple ARISTOTLE and his ſect, who tyrannized in medicine, as well as philoſophy, down to the time of PARACELSUS, and yet delivered nothing uſeful

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in the former, but what was borrowed from the *Coan* monuments; all the reſt is too general, obſcure, or falſe, to be of any ſervice; nay, even GALEN, if you except his anatomy, is only valuable for his genuine repreſentation of the *Coan* records.

What are the voluminous medical treaſures of the Arabians, but the doctrine of ARISTOTLE and GALEN in another language? Thus it appears from the firſt ages down to the chemiſts, all the valuable writings, which relate to phyſic, are few and ſimple; to diſtinguiſh therefore the few original authors from innumerable copyiſts, is a difficulty with ſtudents beſt obviated by an early acquaintance with a judiciouſly ſelected number of the ancients.

The additions to the ſcience ſince HARVEY, beſides what reſpects anatomy and mechanics, are owing entirely to the Carteſians or chemiſts. The former have done little more than incumbered it with uſeleſs fictions, by fleeing ſo haſtily from generals to particulars; the latter indeed have been ſerviceable both to philoſophy and phyſic, by diſcovering the peculiar operations

virtues of particular bodies, and their operations upon one another; but are miſerably miſtaken in the general laws, to which from their particular experiments they conclude all bodies to be ſubject; reject theſe, with their cant of elements, fictitious ferments, effervescences, antagoniſt ſalts the only engines of nature, their pretenſions to what is not feaſible, and conceit that all chemical productions muſt be medicinal, with their practice conſequent upon ſuch chimæras; carefully exclude all theſe from the works of PARACELSUS, HELMONT, TACHENIUS, and the ancient chemiſts, what have you more, than the few plain diſcoveries collected by the worthy Mr BOYLE with great labour, prudence, fidelity and perſpicuity.

See now the face of phyſic cleared from what only diſguiſed or incommoded it! The bulk of all, that really appertains to the ſcience, ſeems not ſo diſcouraging, and what appears to have augmented it, relates no more to medicine than to other ſciences. If any contend, this holds only, becauſe but ſmall advances are al-

ready made in the art, and that this ſimplicity cannot ſubſiſt, when it is arrived towards perfection; reaſon rather dictates the contrary: For there is but one nature peculiar to each thing, which, once diſcovered, remains always ſo; whereas haſty conjectures about matters not properly ſubjected to their cognizance, the more they deviate from truth, the more apt they are to enlarge. How complicated was the fabric feigned of the human body, before diſſections manifeſted the contrary? When HARVEY and MALPIGHI deſtroyed the offspring of a luxuriant fancy, exploded the intricate machinery, the cells of ARCHÆUS with the vaſt variety of ferments, ſtrainers, and efficacious faculties; and later anatomiſts have with aſtoniſhment perceived, that the nicer their ſcrutiny by the help of microſcopes and injections, the more ſimple and ſimilar the organical parts appeared. Nor are the fluids ſo compound as is imagined from the variety of their effects; for the ſame action of the ſame liquid applied to different veſſels produces very different effects;

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the diverſity therefore in theſe does not infer a difference in them: The conſtituent parts of our fluids ſeparable by art are only water, volatile ſalt, oil and earth; which though few, and eaſily reducible to the moſt ſimple bodies, did not exiſt thus diſtinctly in a living animal, but only the *humours*, which by *chemical treatment* afford ſuch productions: The eye through a microſcope diſcovers, that red blood divided merely by the action and ſubdiviſions of the ſmaller veſſels, becomes leſs and leſs coloured, and at length even pellucid: Aliment furniſhes another argument; graſs or hay, and water are converted into the like humours in a cow, as milk or bread, and water in a man; the better therefore we are inſtructed in the nature of animal fluids, the more ſimple we find them, to the confutation of chemical hypotheſes about the cauſes of their colour, heat, *&c.*

It may be objected that the number of diſeaſes is not yet ſettled, that from their *Proteus-like* variation, it would require pages and infinite labour to ſpecify them.

But does not the ſimpleſt affection of the moſt ſimple part by intercepting its action occaſion one certain diſeaſe? Indeed by connection the adjoining parts may be affected, yet in that reſpect only it impedes the actions of the parts ſeized; this impediment is often accounted a new diſeaſe, and many effects ariſing from one indiſpoſition, and appearing diſtinctly under various ſhapes, are by the unwary phyſician pronounced of a different nature, whereas upon ſtricter examination they are all found to proceed from the ſame cauſe, and are extirpated with it: When the blood flows on directly in an artery, each point of the inner ſurface of the veſſel ſuſtains the force of that part of the fluid, which ruſhes directly againſt it; ſuppoſe a particle of a conical figure to have its apex fixt in any one point of the veſſel, then the prominent part or baſis of the cone is propelled by an impulſe proportional to the quantity of the fluid intercepted by it in a direct line, and will be impelled with ſo much greater force, as its ſurface is greater than the point of the veſſel, againſt which a leſs portion of

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the fluid impinged before; but all this force is exerted againſt that point of the veſſel, where the particle is infixt; there conſequently the veſſel will be lacerated, the more fluid part of the blood extravaſated, the more ſolid part thickens, ſtagnates, and is condenſed; Hence an obſtruction in this veſſel, and thereupon the circulation muſt be accelerated, the attrition increaſed in other veſſels, a fever and inflammation enſues; by which the ſtagnating fluid, and what was bland becoming acrid from a double cauſe, the tender animal ſtamina are deſtroyed; if this happens to a vital part muſt not the diſeaſe be fatal? But in the tranſition from health to death all thoſe intermediate actions muſt be impaired, which depended on a healthful ſtate, and theſe being ſo numerous, how ſevere and multiform a diſtemper may befall the healthieſt perſon from one moſt ſimple cauſe only? This inſtance expoſes the dangerous error of thoſe, who imagine the morbid humours apparent at the end of a diſeaſe to have been neceſſarily the cauſe of it; whereas the natural

humours are varied by the influence of a diſtemper every moment, which change is not the cauſe, but the effect of the malady; and therefore he, who labours to remove ſuch effects only without regard to the primary cauſe, is ſure to labour in vain. Great is the uſe of this obſervation with reſpect to the diffuſive and confuſed doctrine of Criſes; for, what is critically diſcharged at the ſolution of a diſorder as excrementitious, was at the beginning of it natural to the body, but degenerated and corrupted by virtue of the diſtemper; if this had been nipt in the bud, the critical matter had never appeared, but remained a ſalutary humour: And the phyſician, who can correct a malignancy as ſoon as it invades the body, anticipates a Criſis. But the maturation, periods and direction of CRISES make one half of medical doctrine. If a man takes ſublimate mercury, the regularity of the functions are immediately perverted, the patient burns, the humours putrify, and the putrid matter diſcharges it ſelf, wherever it finds vent, leaving a ceſſation

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of the impetus after ſuch excretions. Thus is the foregoing illuſtrated; for the phyſician does not wait for this criſis, but immediately obviating the poiſon by an antidote prevents the impending putreſcency of the humours; and conſequently approves himſelf ſo much the better *artiſt*, the ſooner he ſtops the tendency to ſuch a criſis.

The nearer therefore we come to perfection in the art, to the greater ſimplicity we attain. This appears alſo from contemplating with HIPPOCRATES, the nature of thoſe chronical caſes, which are not the conſequence of acute diſtempers ill treated. They ariſe ſpontaneouſly, when aliment is not converted into wholſome humours, either from the weakneſs of the viſcera, or defect of natural ſecretions to dilute the aliment. In theſe caſes the food retaining its own nature proves pernicious inſtead of nouriſhing; trace the reſult of this, and the nature of ſuch chronical diſeaſes is readily apprehended.

Laſtly, Some pretend, that the knowledge of remedies alone compleats the practitioner, and that though their num-

ber is almoſt infinite, yet each is a ſpecific for ſome particular diſeaſe. Were this ſo, adieu to the ſtudy of phyſic as a ſcience: But is this pretence warranted by the practiſe of HIPPOCRATES and SYDENHAM? No; in treating *acute* diſtempers they aſſwaged the impetus, raiſed the languid, ſupported the ſtrength by regimen; what other helps uſed they? When the fever was violent, they made diſcharges, blunted acrimony, diluted too thick fluids, and condenſed too thin; conſtringed lax veſſels, and relaxed thoſe too rigid, made revulſions to parts where the danger was leſs, and adminiſtered occaſionally paregorics. In languors they uſed ſtimulating attenuants. Water, wine, vinegar, barley, nitre, honey, rhubarb, opium, fire, and the lancet anſwered theſe purpoſes. SYDENHAM declares, that a perſon well ſkilled in caſes ſeldom wants remedies; and though he complained at firſt of the troubleſome diverſity of diſtempers, ſuppoſing it neceſſary they ſhould be cured by ſpecifics, yet in his latter years he triumphed in the methodic diſcipline, in ſubduing ſuch numbers

bers of diſeaſes only by bleeding, purging with an opiate after it, and regimen. See on what ſimplicity the princes of the art relied, and have others ſucceeded better? Nay, has not a pompous materia medica proved rather hurtful? What mighty matters have this operoſe pharmacy and chemiſtry afforded? Are the remedies at preſent depended on in *chronical* caſes ſo numerous? Mineral waters, ſalts, artificial ſudorifics, ſoap, mercury, ſteel, a few vegetables, and proper exerciſe, ſerve all intentions; the reſt are of little more uſe than to conceal the ignorance of the doubting phyſician, and by amuſing the patient to prevent his deſpondence. As to drugs recommended by the ancients, HIPPOCRATES, THEOPHRASTUS, PLINY, and DIOSCORIDES, we are acquainted certainly with but very few of them, becauſe they omitted giving delineations of herbs ſo common with them. And the moderns have buſied themſelves more in deſcribing the ſpecies, than the vertues of plants, which they have rather borrowed from what the ancients delivered, ſuppoſing

ing an agreement in kind.—As to Arcana and NOSTRUMS, let thoſe who have them, keep them, till they can convince impartial judges of their real worth, and then they will hardly fail * of a ſufficient reward for their diſcovery. A medicine looſes no reputation by the publication of it, unleſs upon univerſal experience it is not found ſo ſafe and efficacious, as was pretended.

Laſtly, what is there in the moſt curious *preparations* of ſuch extraordinary conſequence? Mercury, opium, the bark, fire and water, 'tis well known, are our moſt potent remedies, and theſe, as nature imparts them, are more uſeful, than any way prepared by art.

Thus, there is no room to deſpair, whilſt ſimplicity guides; but the event of intricate labour is fallacious. How ſimple is PITCAIRN's explication of the wonderful vertues of mercury, from the conſidera-

tion

*Mrs STEPHENS's Saponaceous diſſolvent of the ſtone in the kidneys and bladder may be one proof of this aſſertion.

tion of thoſe two qualities only, its gravity and diviſibility! The ſame may be ſaid of HOMBERG (a man the moſt dextrous in making experiments and cautious in reaſoning from them) in his explanation of medicinal and peſtilential qualities. More arguments might be produced, were not thoſe alledged ſufficient.

A beautiful contraſt is obſervable in theſe orations; the former repreſents the moſt inſignificant part of the body (among the Europeans generally abraded as an excreſcence) in its ultimate ſtructure inſcrutable; whilſt the latter makes every part apparently the more ſimple, the more accurately it is ſcrutinized, and diſeaſes in general (produced by one cauſe only) to be leſs complicate, than the part or parts affected. This paradox might be eaſily ſolved, but that is not our buſineſs at preſent.

The one was evidently intended to humble an indolent pride, whilſt the other encourages that diligence, with which a perſon may modeſtly expect conſiderable ſucceſs in his profeſſion.

SECT.

SECT. II.

Of all Dr Boerhaave's *Writings beſide his Orations and Theſis.*

ANY account of the larger works of ſo juſtly celebrated a phyſician may be thought needleſs on the preſumption, that ſcarce one of the faculty is unacquainted with them. But, as it has been found, that ſome among us have been pleaſed to cenſure our author, who either have not peruſed his *genuine* writings, or not with ſufficient attention*, it may in juſtice be expected, that we endeavour to point out the peculiar excellencies of his ſeveral works, and ſo diſtinguiſh the *ſuppoſititious* † which diſgrace his name, that they may no longer be obtruded for *genuine*.

From

* The ſtile of his Inſtitutes and Aphoriſms is ſo laconic, that nearly a like attention is neceſſary for the thorough underſtanding of thoſe books, as is uſually given to treatiſes of mixt mathematics, and a panegyric, inſtead of a vindication, will be deemed moſt meet after due conſideration.

† Of which he highly complains in the preface to his Chemiſtry.

From the preceeding ſection, and account of his life, it partly appears how well he was qualified for *teaching* no leſs than practiſing phyſic *; poſſeſt of the endowments and advantages above mentioned, he ſoon converted them to the ſervice of the public. Whilſt patients experienced the benefit of his ſurprizing ſagacity, his incomparable collection of the moſt certain doctrines in medicine was communicated not only to his pupils, but to the world.

For the firſt edition of his *Inſtitutiones Medicæ* appeared in 1707, two years before he was created a profeſſor, about ſix years after he began to officiate as lecturer. p. 31.

This

* A Science notwithſtanding the repreſentation lately made (p. 93, *&c.*) of its facility, to be ranked deſervedly among the moſt difficult, ſince from the frequent variation of its objects the application of its ſureſt rules (level to midling capacities) is too often rendered fruitleſs, when recourſe muſt be had to the ready ſuggeſtion of a perſpicacious mind to ſubſtitute new helps in the room of thoſe relied on before; and if a man indulges himſelf in hypotheſes, he may have to unlearn, what in ſpite of all his caution he at firſt imbibed as almoſt indiſputable.

This book has been reprinted at Leyden four times (in octavo) with ſome few additions. After, a ſuccinct but correct hiſtory of the origin, progreſs and ſucceſs of the art; the conſideration of its principles, and the uſual diviſion into its five branches, phyſiology, pathology, *&c.* he enters upon the diſquiſition of the former, that is of the animal œconomy with an examination of the materials or aliment, which by the fabric and action of the animal machine is converted into an animal ſubſtance; purſuing it through its ſeveral ſtages, he remarks its various changes from *manducation*, the firſt animal action upon it, to *ſanguification* the laſt it has as yet been traced to; and deſcribes the ſeveral organs with the diverſe ſecreted humours in the ſame order, in which they are found to contribute to this alteration of the food. The new light afforded to this extenſive doctrine by his ſingular diſtribution of its parts, the rejecting thoſe hypotheſes which owe their birth to the wild conceptions of metaphyſicians and chemiſts, and the comprehenſive brevity of the

the whole, have recommended this work to the perpetual eſteem of the moſt eminent phyſicians. It was his conſtant maxim not to deliver any propoſition as certain, but what was grounded upon obſervation, experiments, or clear deductions from them. The references to the tables and authorities of the anatomiſts and phyſiologiſts, who had beſt deſcribed each part there treated of, (having firſt * compared their deſcriptions with the part or preparation it ſelf) greatly conduce to an eaſy acquiſition and retention of phyſiological knowledge; and indeed this † theory of

* That no new diſcoveries or obſervations might eſcape him, as well as to refreſh his memory, he became almoſt a conſtant attendant on the public lectures of Profeſſor RAAU, and of ALBINUS afterwards, though formerly his pupil, without thinking it derogatory from his character.

† By the title of *Inſtitutiones Medicæ* rather than of *Theoria Medica* he here avoids the diſputes about the importance of theory to a phyſician, and whether phyſic is an art or a ſcience. This controverſy could ſcarce have ſubſiſted, one would think, had not medical theory been confounded with meer hypotheſes in phyſic; and it may be ſatisfactorily decided by our author's dictata on Sect. 22, of his Inſtitutes. See HALLER's, H. BOERHAAVE *Prælectiones Academ. &c.* p. 53, 54.

of the ſcience claims a regard, as much ſuperior to any other, as was that fund of learning, which furniſhed it from the united principles of mathematics, anatomy, philoſophy and chemiſtry. No wonder therefore he was whilſt living univerſally acknowledged the beſt theoriſt in his profeſſion, and that the fame of this book was not confined to Europe, for both it and his Aphoriſms, or practice of phyſic, were by order of the Mufti tranſlated and printed in the Arabic language at Conſtantinople, to ſpread his doctrine throughout the Ottoman Empire*.

The next year this theory was ſeconded by his practice of phyſic, inſcribed *Aphoriſms* for the *knowledge* and *cure* of *diſeaſes*, which book has likewiſe undergone five impreſſions at Leyden. Theſe works reflect a luſtre upon each other. In compoſing

* The *Inſtitutiones Medicæ*, was one of the firſt Books, which occupied the preſs erected by the grand Vizir at Conſtantinople; and a remote part of Aſia afforded another inſtance of the Author's extenſive fame, by a Letter from thence with this addreſs.——To Mr BOERHAAVE Phyſician in EUROPE.

poſing the latter, ſmall in bulk, but yet with important contents, the production of intenſe labour, and exquiſite judgment, he acknowledges himſelf moſt indebted to the ſucceſsful induſtry of the Greek phyſicians, thoſe curious obſervers and followers of nature. Whatever in HIPPOCRATES is founded on faithful obſervation and firm experience, is here delivered in the Hippocratic ſtile, well digeſted, and more compendious than the original; with that he nicely incorporated what is of greateſt uſe in the reſt of the Greek and Latin fathers of phyſic, and in the beſt of the Arabian, as well as of the modern writers: But from the Arabians with all their ingenuity, aſſiſted by thoſe labours of the antients, finding the ſcience to have been detrimented more than improved; and fearing, that even the moderns, notwithſtanding the helps they might receive from their predeceſſors, their own diſcoveries in anatomy, improvements of natural philoſophy, and of thoſe arts that are applicable to phyſic, have likewiſe contributed more to its declenſion than ad-

vancement, by indulging ſuch a licentiouſneſs in hypotheſes, and by their raſh ambition to raiſe the art at once to its higheſt perfection, whilſt they have ſeemed either to contemn or to be unacquainted with the beſt authorities, or made ſuch injudicious tumultuary collections from them as rather obſcured than illuſtrated it; he prudently collected in his adverſaria, from all theſe authors, what in each of them appeared ſo juſt and rational, as muſt not only gain the aſſent of every ſkillful phyſician, but had been already confirmed by his own experience; and interweaving beſides what his further obſervations in practice, together with ſome later diſcoveries of ingenious men furniſht, he formed this unparallel'd ſyſtem; which pleaſed almoſt every body but himſelf, who modeſtly declares, that he was too ſenſible of its defects, eſpecially if compared with the works of the ancients. However in juſtice to him it muſt be confeſt, that one receives from it all the advantage without the inconveniences of a ſyſtem, ſince here all the principal diſtempers are repreſented together

together with their mutual relations, and the cauſes, concomitants, and cure of each are ſtated diſtinctly and accurately: it is not a collection of ſuperficial views, or tranſient touches, the common objection to moſt ſyſtems.

Some may think it defective, becauſe no formula of medicine is to be found in it; which was the reſult of caution: he was well aware how forward empirics are to tamper with any preſcript tackt to the name only of a diſtemper, who generally preſume an acquaintance with thoſe two (without troubling themſelves about the conſtitution, diagnoſtics, *&c.*) a ſufficient qualification for the practice of phyſic, notwithſtanding their fatal miſtakes almoſt daily demonſtrate their error. * How ſucceſsfully he has applied his knowledge in mathematics to medicine, is evident

* Remedies then alone deſerve the appellation, when critically exhibited in reſpect of time and indication; and therefore he propoſed here to give only the general indication of cure, leaving it to the practitioner to adapt particular forms to the particular circumſtances of each caſe, as directed by the rules of the art, or by his *dictata* on this book.

from the method in which the diſeaſes are ranged; beginning as in geometry from the moſt ſimple he proceeds gradually to the leſs and more complicated, whereby the preceeding illuſtrate the ſubſequent, and nauſeous repetition is avoided. Among the former of theſe he found it neceſſary to include chirurgical caſes, † the thorough knowledge of which he proves in his lectures tobe indiſpenſably neceſſary to the forming a good phyſician: eſteeming ſurgery the moſt certain and fundamental part of phyſic, he made it the ſubject of his practical lectures during about half the annual courſe.

The grand objection againſt theſe books of inſtitutions and aphoriſms, is, that the conciſeneſs of the ſtile creates obſcurity; for

† In this he may be ſuppoſed to have followed *Johnſton*'s *idea vel ſyntagma univerſæ medicinæ practicæ*, which the learned *Bonetus* makes the text of his *polyalthes, ſive theſaurus medico-practicus*; but yet the ſeveral diſtempers here are ſo far from being diſpoſed with the like connection and immediate dependance on each other, as in BOERHAAVE's aphoriſms, that it could be but of little ſervice to him.

‡ A ſhort account is given of this book of aphoriſms from the *French* tranſlation in 1737. See *Journal des ſcavans, Mars*, 1739. *p.* 375.

for which he apologizes in the preface to the latter, " that they were intended only " for his own pupils, ſerving as the text " of his annual lectures," the inſtitutions for a text of the theory, and the aphoriſms of the practice of phyſic. His manner (like that of the other eminent profeſſors in that univerſity, after they have publiſht a compendious ſyſtem for their lectures) was to read a paragraph, or whole ſection if ſhort, to explain it if needful, expatiating on it without notes before him, and ſo largely ſometimes, eſpecially in the firſt chapters of theſe books, that he did not proceed further than one or two pages of either book in a whole lecture, which uſually laſted an hour. It ſeems therefore intended his dictata ſhould be requiſite (at leaſt for ſtudents) to illuſtrate ſeveral paſſages in theſe books, which are allowed to comprize the moſt important and fundamental doctrines of medicine in much leſs compaſs than any other extant. They were both tranſlated into Engliſh diſadvantageouſly enough, and the Aphoriſms in 1737 into French. Dr HALLER, for-

merly a pupil of BOERHAAVE's, publiſht laſt year at Gottingen in the dutchy of Brunſwick one volume of four, (which he intends within a year) entitled *Hermanni Boerhaave Prælectiones academicæ in proprias inſtitutiones rei medicæ*: a thick octavo. Herein are contained BOERHAAVE's dictata on the book of inſtitutes, taken by Dr HALLER in the years 1725, 1726, 1727, for thoſe extempore dictates abounded every year with freſh arguments on the ſame topics. Theſe dictata he makes the text of his book, and gives notes upon them by way of illuſtration, confirmation, or improvement; for he has added ſome diſcoveries of his own which BOERHAAVE was unacquainted with, and ſome authorities which had eſcaped him; thus attoning for the deficiencies of his manuſcripts.

The dictata on the aphoriſms were printed at Amſterdam, under the name of PADUA, about ten years ago, in five volumes octavo; but ſo ſcandalouſly incorrect, as if the editor had neither underſtood the ſubject or the language, nor intended

intended benefit to any except the proprietors of that edition. But now Dr VANSWIETEN, a phyſician of the firſt rank at Leyden, has ſent to the preſs his commentaries on the aphoriſms, which will be in 2 vols. 4to, ample reparation is likely to be made to the publick. He was many years under BOERHAAVE, and afterwards, at the requeſt of the Engliſh ſtudents, a lecturer on pharmacy. By adapting ſhort hand to the Latin tongue, he took the dictata almoſt verbatim, and from his abilities, as well as labour there is reaſon to expect an accurate edition of this work, which happily compleated, will be equivalent to a library of practical writers, or at leaſt the beſt ſubſtitute for all beſides thoſe, who have given hiſtories of particular caſes, or treated on ſome cutaneous diſeaſes and on ſuch topical diſorders, as thoſe of the eyes, ears, *&c.* tho' the affections of theſe two organs may be ſupplied from the public lectures (BOERHAAVE gave upon each of them) hereafter mentioned.

His *Materia medica* relating entirely to the aphoriſms ſhould be conſidered in this place, although his firſt edition of it was in 1719. It was compoſed ſolely for his own college, and not deſigned for the preſs; but upon receiving a ſurreptitious copy of it publiſht at London 1717, in 12ves, full of errors, too dangerous to paſs uncenſured, being compelled to reviſe and correct, he alſo augmented it. It was reprinted in 1727 with farther corrections. Nevertheleſs he diſſwades every one from uſing it, who is unacquainted with the hiſtory of the diſeaſe as delivered in the aphoriſms, (to which the ſections refer,) and explained by his comments upon them; never recommending any particular preſcription without ſpecifying the caſe with the minuteſt circumſtances, in which alone it was adviſeable; always admoniſhing, that what was ever ſo proper in any diſtemper, upon an alteration in ſome one ſymptom or circumſtance might prove not only ineffectual but pernicious: therefore he, who is beſt verſed in the doctrine of the aphoriſms, is the beſt judge of the application

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and uſefulneſs of thoſe formulæ, in commendation of which 'tis ſufficient to alledge, that their ſucceſs, when adminiſtered with the reſtrictions enjoined, has given general ſatisfaction to thoſe who have experienced them. How ridiculous therefore is their preſumption, who unjuſtly cenſure what they never qualified themſelves to underſtand, or never ſubmitted to a fair tryal? He will merit exceedingly of the public, who produces a ſpecimen of medicines adapted with greater judgment and accuracy to the particular indications of ſo many and mighty diſeaſes. But 'tis objected, that in theſe and the author's extemporaneous preſcripts, the gratification of the eye or palate is not conſulted; and it may be replyed, that his countrymen are happily indifferent about ſuch niceties, being rarely diſpleaſed with what anſwers the intention ſooneſt and cheapeſt; whereas in ſome places an affectation of extraordinary neatneſs in preſcription has been attended with a proportionably leſs regard to the efficacy of medicine; and loads of inſignificants have proved

proved at length more nauſeous, and much more expenſive, than the ſmall quantity, which, though diſtaſteful, would at firſt have ſufficed for the cure; our author was wont to recommend that injunction of CELSUS, to effect a cure ſpeedily, ſafely, and agreeably; yet he thought the laſt circumſtance deſerved by far the leaſt conſideration.

Another objection is raiſed againſt the multiplicity of ingredients, many having the ſame virtue which are crowded into one preſcription. This he obviated by intimating to his audience, he never intended they ſhould all be uſed at once, but only two or three of each claſs, ſuch as the phyſician might prefer, or the place and ſeaſon afford, increaſing their quantity ſo as to compenſate for the omiſſion of the reſt. A third and very material objection, that has prompted perhaps mercenary men to invective more than any other, is, the form of pills, and decoction or apozem, frequent in his extemporaneous preſcripts, as in his pharmacopœia, which forms he apprehended

in

in general the moſt advantageous to the patient, though unluckily the leaſt lucrative to ſome retainers to the art. Indeed the faſhion of his country might at firſt lead him into the more common uſe of theſe forms, variety of faſhions obtaining in the pharmacy, as well as cookery of various countries; but afterwards the greater efficacy confirmed him in the uſe of them; nor was he likely to have been deceived as to the form, in which the materia medica is moſt ſucceſsful, who by his works appears to have been conjunctively the beſt botaniſt and chemiſt of the age. Beſides, in regard to all theſe objections it ſhould be conſidered, that he preſcribed not to a court only, but to the world, to pupils who were to practiſe in all parts and places, in the army, in fleets, among rich and poor.

For the ſervice of his pupils chiefly he publiſht, in one volume octavo, an index of the plants in the phyſic-garden, with which it was ſtored in 1710, the year after he was made profeſſor of botany. In 1720 he gave a ſecond index in two

volumes

volumes quarto, prefixing a new and large preface, with a plan, and ſhort hiſtory of the phyſic garden, wherein he makes honourable mention of all the profeſſors preceeding him, and relates the improvement it received from each of them. He has given alſo ſeveral plates of ſpecies of plants never before publiſht. In this ſpace of time he had doubled the number of plants, and raiſed it to the moſt flouriſhing ſtate of any phyſic-garden in the world; exhibiting a ſpecimen of almoſt all the productions from each quarter of it. Nor was it more ſingular in reſpect of the number, than of the ſtrength and vigour of its plants, the concinnity and regularity with which they were diſpoſed. In this index he claſſed them more judiciouſly than any before him, not ſervilely following (like ſome of his predeceſſors) the method of MORISON, RAY, *&c.* but ſelecting from the beſt authors, as well as inſerting of his own, what he judged moſt conducive to the forming a better ſyſtem. LINNÆUS confeſſes him to have formed his *genera plantarum* in the moſt accurate

accurate manner, being the firſt, and only botaniſt, who took to his aſſiſtance all the parts of plants concurring to fructification, and gave ſo clear a verbal deſcription of them as to render the engraver's art needleſs. Although ſome of the moderns had merited by augmenting the catalogue of plants, or claſſing them more commodiouſly, they had on the other hand greatly loaded a ſcience unavoidably too burthenſome to the memory, by giving new appellations without reaſon to plants, that were long before properly named and accurately deſcribed. Theſe innovations (for which JOHN BAUCHIN, MORISON and TOURNEFORT were moſt culpable) he juſtly condemns and ſtudiouſly avoids. This made him impatient for the publication of the pinax propoſed by conſul SHERRARD, wherein that prince of botaniſts intended to fix the divers names given to each plant compleatly deſcribed, in ſo correct a manner, that there ſhould not be the leaſt inducement to forge any new thenceforward, hoping to leave this ſcience ſo far as he carried it immutable

for

for ever. Altho' it is certain the ſpecies of plants never vary from themſelves indiſtinguiſhably, yet their external habit, according to the difference of ſoil and ſituation, ſometimes varies ſo much as to deceive whoever does not diſtinguiſh them (as it is the happineſs of the preſent age to do) by the parts of fructification, which never alter. But ſince botaniſts, after comparing them thus ſettled with the deſcription of authors, have collected all the ſynonyma, which by divers authors had been given to each plant, and ſince VAILLANT and others have given exact deſcriptions and delineations of them from the places where they naturally grow, and alſo by preſerving them betwixt paper formed ſo compleat an *Hortus ſiccus*; they have been able to determine the real number of plants already diſcovered, and to ſecure the diſcriminate knowledge of them to the lateſt poſterity. There was yet another motive to the printing his index. He perceived the cultivators of botany were not ſo effectually excited to communicate of their duplicates, as by an aſſurance they ſhould in return

return have their deficiencies ſupplied; and therefore if he appeared by this index poſſeſt of what they wanted, he was certain of obtaining his requeſt from them on the foot of exchange. The ſucceſs anſwered his expectation, for as his ſtock increaſed, ſo did his correſpondents; and ſuch was the number of plants thus procured in ten years after the firſt index, that, as was before hinted, the ground then alloted for this garden could not now contain half the plants. He was likewiſe ſo careful his correſpondents ſhould not repent the ſervices done him, that beſides retaliations in kind, their names are immortalized in that elegant oration above-mentioned on reſigning this profeſſorſhip. p. 44. There in high ſtrains of gratitude he recites the friendſhips and favours of the SHERRARDS, Sir HANS SLOANE, Baron BASSAND, and about forty more of different nations; but Theſe deſerve particular mention, as names whereon he dwells with much complacency. Hence it appears how extenſive and laborious the epiſtolary commerce was in this ſingle branch

branch of his profeſſion. Beſides his botanical knowledge was not of the barren kind, but furniſht him new ſubjects for chemical operations, and new medicines for uſe. After about ſeventeen years when he had, in his lectures upon the index in the garden, given a much fuller deſcription of the plants, with the hiſtory of their virtues, ſeveral manuſcripts of the dictata were reduced into one, and publiſht in Holland fictitiouſly ſtiled *Rome* in 2 vols. 8vo, in 1727; but although not free from the incorrectneſs of a ſuppoſititious work, it is not to be contemned.

BOERHAAVE, like Sir ISAAC NEWTON and other great men, had ſo much reaſon to be ſatisfied of the truth of what he publiſht, that he declined controverſy, to which ſome trifling exceptions or malevolent inſinuations would have irritated men of leſs judgment and temper. He thought among the impartial truth might be truſted to vindicate itſelf; but when the inveſtigation of it could only be effected by entering the controverſial liſt, no man was more ready to engage in the diſpute,

diſpute, or more genteel in conducting it. This is exemplified in his epiſtle to Ruysch in 1722, wherein he defends Malpighi's doctrine of the glands againſt that curious anatomiſt, and ſets the arguments in a ſtronger light, than Malpighi himſelf: Well knowing, that Ruysch had then both the beſt injection and manner of preparing ſubjects for it, beſides the advantage of a piercing eye ſo accuſtom'd to microſcopical obſervations, that no man was likely to apply glaſſes with more ſucceſs to ſuch anatomical ſubjects, with which he was continually ſupplied by the frequent executions at Amſterdam; and perſwaded alſo that no requeſts would prevail with him to ſcrutinize the minute ſtructure of the glands ſo effectually, as an endeavour to eſtabliſh a contrary doctrine againſt a man impatient of contradiction, Boerhaave concluded by this method, he ſhould be inſtrumental to thoſe deſirable diſcoveries in phyſiology, which he had neither leiſure nor convenience to make himſelf. The event juſtified his concluſion:

Notwithſtanding the Malpighian doctrine was refuted, yet the controverſy on our author's part is managed with that dexterity, generous frankneſs and apparent unconcernedneſs about mere victory, as to make this letter highly entertaining. In diſputes to which the deſire of information is the principal incentive, neither candour nor mutual benevolence are ſufferers, and the conquer'd equally ſhares the pleaſure of the conqueſt: So here no ſooner was that ſole end in view anſwered, but with ſatisfaction he dropt the controverſy, and his antagoniſt was rarely named by him afterwards without an epithet of reſpect.

In 1724 he publiſh'd the caſe of Baron WASSENAER, which is juſtly deemed an incomparable ſpecimen of the art of deſcription for inveſtigating the real ſtate of the patient, and the principal indications, in moſt intricate diſtempers.

In conjunction with the preſent profeſſor ALBINUS he gave an edition of all the anatomical and chirurgical works of VESALIUS in 1725, with the life of that learned

learned anatomiſt. The recovery of thoſe moſt accurate tables of EUSTACHIUS (engraven by his own hand) from ruſt and obſcurity, after lying dormant about 150 years, was reported to have been partly owing to a hint of BOERHAAVE's in his preface to an edition of the *Opuſcula Euſtachiana*, wherein he laments the loſs of them; for the Roman or firſt impreſſion of theſe plates did not appear before 1714.

He obliged the world with another accurate hiſtory in 1728 of an uncommon caſe, which proved fatal to the marquiſs of St Auban after ten months inceſſant ſtruggle with it.

The ſame year appeared his treatiſe on the Venereal Diſeaſe, ſerving as a preface to the laſt edition of the earlieſt authors on that ſubject. It was ſoon reprinted by itſelf in London in folio and octavo at the ſame time, and alſo tranſlated into Engliſh. There were ſome idle reflections caſt upon it in a jejune treatiſe on gleets, the author of which unfortunately miſtaking ſcurrility for argument, and buffoonery for wit,

had not deſerved our notice, otherwiſe than as his manner of writing exhibits a perfect contraſt to BOERHAAVE's controverſial epiſtle juſt recommended.

His elaborate edition of ARETAEUS appeared in 1731, when he was proceeding with Dr. GROENVELT to give a compleat Edition of all the Greek phyſicians except HIPPOCRATES and GALEN (already publiſhed by CHARTERUS) and had made a conſiderable progreſs in NICANDER; but his innumerable occupations with the deplorable brevity of his life afterwards prevented the execution of this great undertaking. What was done of ÆTIUS is in the hands of VANDERA, bookſeller at Leyden, and his NICANDER, with other of his manuſcripts are in the poſſeſſion of the KAAVS beforementioned (*p.* 49) of whom it is thought they may be purchaſed.

The following year produced his elements of chemiſtry in two volumes quarto, which, had it been the only labour of his life, would deſervedly have perpetuated his memory. The ſtate of chemiſtry when he

he entered upon teaching it has been repreſented *p.* 37-40. Let us now ſurvey what he has done for its advancement, who was not leſs able, but much more willing to build, than to demoliſh. The work is divided into three principal parts.

The firſt contains a brief and learned hiſtory of the origin, progreſs, culture and fate of the art, of the various ſects of chemiſts, and of the chief authors in their chronological order, with ſome ſhort remarks on their agreements and diſſentions, and on the advantage or diſadvantage to the art thence ariſing. No author is undervalued, whilſt he recommends thoſe of diſtinguiſhed uſe. This part may be properly annexed either to LE CLERC's eſſay of a plan for the continuation of the hiſtory of phyſick, to Dr. FREIND's hiſtory, or to both, as near half of it is converſant about the chemical phyſicians of the later centuries.

The ſecond and largeſt part comprehends the theory of chemiſtry, not a hypothetical or fictitious, but a true and operative theory, founded upon thoſe gene-

ral propoſitions alone which are deduci-ble from many, common, and certain che-mical experiments, ſuch as always ſuc-ceeding alike warrant the inference of a general truth; extending this very rule no further than to thoſe particular bodies, which are obſerved to be of the ſame na-ture, ſince the effects of the peculiar vir-tues of particular bodies cannot be fore-known by any general theorem, as reſult-ing from the diſtinct nature proper to this or that body alone. In forming this theory, he was not only aſſiſted by thoſe phyſical indiſputable truths, diſcovered by chemiſts of ſuch general uſe, as to afford inſtruction for the performance of all ope-rations truly chemical, but alſo by a pru-dent application of other truths demonſtra-ted in phyſics, mechanics, hydroſtatics, hydraulics, *&c.* ſo far as the properties common to all bodies exiſt in chemical ſubjects. How requiſite caution is in the uſe of theſe helps appears in the deviations from general laws cauſed by ſome ſingular powers of bodies, as from the law of gra-vity by the interfering of magnetiſm, elec-tricity,

tricity, or of chemical menſtrua; ſince gold is diſſolved and ſuſpended in ſo light a fluid as Aqua regia: But under the aforeſaid reſtrictions thoſe branches of ſcience prove ſerviceable and never prejudicial to the art.

The third and laſt part compleats the whole by a judicious collection of proceſſes, exhibiting the chemical manner of analyſing, and changing bodies, according to the rules of the art, and the end in view. As common things, if uſeful, are not omitted, ſo needleſs repetitions are avoided, both by an happy diſpoſition of the proceſſes, making thoſe previous which are neceſſary to the illuſtration and execution of the ſubſequent, and alſo by the relation of the theorems in the foregoing part, from which all the operations will be eaſily underſtood, and reciprocally by theſe is the truth of thoſe theorems demonſtrated: Thus the head and hand proceed with mutual advantage. Here we ſee what it is ſurprizing no ſyſtematical writer in chemiſtry has evinc'd before, how plentifully the practice of this as well as

other arts rewards the diſcreet labourer. How much thereby the judgment is inlarg'd! What a quickneſs of apprehenſion is acquired! What prudence, the reſult of experience, that not only ſhuns thoſe unneceſſary circuits to knowledge, by which mere ſpeculative men are often retarded, as foreſeeing what is uſeleſs, but alſo prevents thoſe dangers, to which the unexperienced in this art are ſo liable! What ſagacity for applying the ſame knowledge to better purpoſes, or for making it more ſubſervient to the operator's own purpoſe! Or laſtly, how great the advantage of method, which here, from a chaos of experiments, and many of thoſe by illiterate men too, has formed a ſcience contributing more to the perfection of natural philoſophy than any other, and not leſs to the improvement of phyſic. Many are the difficulties conquered only by a methodical diſpoſition of ſome general rules deduced from a collection of genuine experiments, even of thoſe which were at firſt but caſual. We have extracted the following ſpecimen of

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the general method obſerv'd in relation to the proceſſes, not only as it may be agreeable to the natural philoſopher and phyſician, who has not yet converſed with this book, and may refreſh the memory of thoſe who have, but as it ought to be followed by all writers on this art for the future.

As one example is here given of every pertinent and uſeful operation, to which any ſingularity in the performance is requiſite, ſo uſeleſs repetition is prevented by exemplifying the proceſs in one ſubject only, and ſubjoining the bare enumeration of others admitting a like treatment. Having thus cautiouſly collected his number of proceſſes, he diſpoſes them in the mathematical order before hinted, as far as the ſubject allows, and this indifferently whether they reſpect philoſophy * or medicine,

* Chemiſtry had been treated rather as a ſeparate ſcience, having little or no relation to natural philoſophy or mathematics, 'till BOERHAAVE in his lectures repreſented it as but a branch of the former, and illuſtrated it by the latter; Dr FREIND's chemical lectures were not read 'till two or three years after BOERHAAVE began his courſes of chemiſtry, and their publication was ſeveral years later.

medicine, ſince hereby much time, labour and expence is ſaved in gaining an acquaintance with the chief uſe of the art in its utmoſt extent, both as it teaches and diſcovers the powers of nature and the means of health. The three kingdoms or ſorts of bodies, the ſubjects of chemical operations, *vegetables*, *animals*, and *foſſils*, are examined in this order of ſucceſſion, as the firſt are not only more ready at hand, but afford ſubſiſtence immediately or ſecondarliy to animals, ſo that theſe are a different modification of them: Beſides, the conſtituent parts of vegetables are ſimpler, and the chemical ſeparation of them eaſier. Indeed the conſtituents of FOSSILS are the moſt ſimple, but the art of treating them, the requiſite inſtruments and operations are much more compound, intricate, and difficult.

Having cleared the way thus far, nothing required more deliberate conſideration and greater diſcernment, than to determine the leading proceſſes in each kingdom. This was at length effected by attending to three things, the operation itſelf,

ſelf, its ſubject, and inſtruments, with the ſeveral conditions in each which demand a priority.

A *chemical operation* is the making a change in any body (by the uſual chemical inſtruments) productive of ſome end propoſed by the art itſelf. Theſe four conditions therefore were found neceſſary to conſtitute the *primary* operation in a courſe of chemical demonſtrations. That it be 1. Moſt eaſy in reſpect of the *matter* operated upon, as exerting the leaſt violence. 2. Moſt *ſimple*, not compounded of various operations, nor requiring many inſtruments. 3. That the *alteration* hereby ſuperinduced on bodies ſhould not be ſo great, but that a conſiderable reſemblance of their original form and nature ſhould ſtill remain; ſo that 4thly the effect of this operation ſhould rather be the meer *ſeparation* of a part or parts (ſo as to preſerve the very ſame ſtate of them, that pre-exiſted in the compound) than a production of any thing new by *virtue of the operation itſelf*; that upon uniting the parts thus ſeparated, they may recompound the original

original body; ſince many chemical productions are creatures of fire, or of the operation only.

An equal number of advantages flow from the obſervance of theſe four conditions; the certain knowledge of the parts as they pre-exiſted in the ſubject under examination; and of the nature of the reſiduum, as having been little or nothing altered by the operation; a liberty of examining by new operations this reſiduum, for a further diſcovery of thoſe native parts ſtill remaining unchanged; and laſtly, a clear comprehenſion both of the action, and inſtruments employed in this experiment.

The *ſubject* of the firſt operation ought to be ſuch, as not only yields thereupon what is the moſt ſimple and homogeneous producible by any operation whatſoever, (water may be deemed a production of this ſort) but what alſo contributes to the compoſition of other bodies: Beſides, it ſhould be eaſily ſeparable into the parts intended; for as ſimple as gold is, 'tis moſt difficult to reſolve it into its conſtituent Parts. Thus will

will the ſeparation be in the moſt natural order, and the remaining parts adapted to diſcloſe themſelves by ſubſequent operations.

Laſtly, the *inſtrument* in this operation ſhould be ſo ſimple, that the operative cauſe excited by it may be eaſily underſtood and applied, and that the matter operated upon may not be contaminated by any commixture of the parts of the inſtrument. It ought alſo to be of ſuch univerſal uſe, as to be concerned in all the following proceſſes, lending its aſſiſtance to other inſtruments. Moreover, it muſt not alter the form of the whole ſubject any further, than is neceſſary to the performance of this firſt operation. Nor laſtly, ſhould it by its influence make any conſiderable change in the different conſtituent parts of the ſubject, or in their arrangement; otherwiſe confuſion, inſtead of light, would attend the uſe of the inſtrument in theſe philoſophical enquiries: But, when thus circumſtanced, the operator will not only have an accurate knowledge of the efficacy of its firſt action, but alſo

of

of what it contributes by its preſence to future operations.

A due regard to theſe conditions rewards us with a diſcovery of the real conſtituent principles of the ſubject, and directs us to this firſt operation, as performable by the gentle action of ſuch a degree of fire as is diffuſed every where, when apply'd to the liquid and moſt volatile parts of *vegetables*, ſince thus an eaſy ſeparation is effected with the leaſt alteration, by an inſtrument concurring in every proceſs. The firſt therefore of this courſe is the diſtillation of a freſh gathered herb abounding with volatile parts (as roſemary) in a pewter alembick, ſo as to ſeparate the water of the plant by an heat not exceeding the ordinary heat of ſummer (according to FAHRENHEIT's Thermometer) cauſing it only to exhale in the form of vapour. Having thus ſingled out the *firſt proceſs*, the next progreſſion to infuſions, and ſo on to extracts; vegetable ſalts native and lixiviate; oils, by expreſſion, coction and diſtillation, &c. was more obvious.

But,

But, when he came to *animal ſubjects*, the difficulty ſtill recurred of knowing where to begin; 'till conſidering that all animals owe their ſubſtance to vegetables, either immediately, or by the mediation of thoſe animals which feed on vegetables, and conſequently, that an animal conſiſts of that matter, which when received was not animal, but by the proper action of an animal-body is converted into an animal nature, he concluded theſe proceſſes on animal ſubjects ought to commence from that matter, which tho' vegetable in its origin, begins in the animal to loſe its vegetable and to put on the animal nature; and which likewiſe may be ſeparated from the reſt of the animal parts, and examined by itſelf; that ſo its ſucceſſive changes may appear, eſpecially whilſt it retains much of its vegetable nature. By proceeding thus gradually, we obtain a better knowledge of the nature of the human body, the end of all this labour, than by beginning (as the abſurd cuſtom has been) with the examination of a part, that has undergone all the actions of the body.

Having

Having compleated his courſe on vegetables in 88 proceſſes, he makes the examination of (cows) *milk* the firſt of thoſe on animal ſubſtances, as it not only is ſomewhat aſſimilated to the animal nature, but affords the matter of nutrition to all animals that make milk, both male and female; inſomuch that all the ſolids and fluids are (by the operation of the animal organs) ſupplied from it. Nevertheleſs whilſt milk, it retains ſo much of the vegetable nature, as by degenerating to become acid; whereas all ſubſtance purely animal is incapable of acidity, and by corruption becomes putrid and alcalious.

His laſt proceſs therefore on vegetables, that of *putrefaction*, is an appoſite introduction to thoſe on animal ſubjects. After an examination of theſe in 39 proceſſes he proceeds to Foſſils, and is naturally led to the conſideration of ſaline bodies before others, as being almoſt ever aſſiſting in the preparations of the reſt; and firſt to Nitre, as moſt a-kin to animals and vegetables in its origin, and participating of all the three kingdoms. Next follow in their

natural

natural order the proceſſes on ſulphur, which preceed metals for the ſame reaſon as do thoſe on ſalts; after an examination of theſe bodies in 21 proceſſes on ſalts, 13 on ſulphur, 43 on pure metals, and 21 on ſemimetallic bodies ſaline and ſulphureous, he concludes (where ſome celebrated chemiſts have begun) with the chemical phænomena and doctrine of ſolution, coagulation, precipitation, efferveſcence, the production, alteration and deſtruction of odours, taſtes, and colours, which cannot be eaſily, if at all, explain'd without the help of the preceding proceſſes.

Thus, he finiſhes the operative part of chemiſtry with equal ſucceſs, as he had the theoretical, having reduced to 227 proceſſes all thoſe, which are requiſite for the underſtanding any other.

After due attention one is at a loſs whether to admire moſt the illuſtration of the art from mechanicks, and natural philoſophy; the analyſes of vegetables, animals, and foſſils drawn from experiments or their neceſſary conſequences, with the inſtructive analogy thence reſulting;

ing; the exact ſcrutiny into the virtues of chemical productions, with the faithful and ingenuous relation of them, exempt from the uſual ſpagirical jargon, and rodomontade; the eaſy acceſs open'd into the three natural kingdoms after the expence of penetrating ſo deeply into the hidden receſſes of nature; or laſtly, his exceſſive modeſty in treating the ſubject, who is ſo far from deciding peremptorily in any particular, as to put every thing dubious to a reference; ſurely ſuch a conjunction of excellencies in one performance muſt extort commendation from envy itſelf.

But to convince the world how much the beſt things may be miſrepreſented, eſpecially when hopes are entertained of gratifying malice with profit, the year after BOERHAAVE had himſelf publiſh'd his chemiſtry, there appears a book in 8vo intituled, *Dr.* BOERHAAVE's *elements of chymiſtry faithfully abrig'd from the late genuine edition, to which are added curious and uſeful notes rectifying ſeveral opinions, &c. of the learned author, by a phyſician.* The abridger, which is all can

can be ſaid in his praiſe, had the modeſty to give the firſt edition without his name; but it was reprinted in 1737, with the name of EDWARD STROTHER, M. D. * with reſpect to, the errors of the abridger in his own preface, and in ſome of his tranſlations directly contrary to the ſenſe of the original; the mutilation of his author's ſenſe by incoherencies; the injudiciouſneſs in attempting to contract, what was conciſe in the original, whilſt nauſeous repetitions of the uſual phraſes of addreſs to the audience are inſerted in ridiculous terms; the impertinence of, as well as miſtakes in, ſeveral of the notes; the barbarity of ſtile; the rude and aſſuming manner of treating one in the eſteem of the world ſo much his ſuperior, and the malevolent diſpoſition to put the worſt conſtruction on every thing, whilſt many excellencies in the original work, which ſtrike every intelligent peruſer, are obſcured, ſuppreſt, or perverted; It is hard to ſay which of theſe articles gives moſt diſ-

* See what BOERHAAVE writes concerning this Abridgment in the Appendix. Epiſt. 4.

guſt to a candid reader, but certainly all of them put together demonſtrate this performance to be ſuch, as intitles Dr STROTHER to the character of an *author* rather than *abridger*, it being more unlike the genuine work, than that wretched ſpurious edition printed from incorrect copies of the Dictata eight years before at Leyden, under the name of Paris, in two volumes 8vo. 1724, of which BOERHAAVE complains in his preface; and much inferior is it to the edition given from that, and additional manuſcripts by Dr SHAW and Mr CHAMBERS with uſeful notes in 1727. Altho' for reaſons mentioned this abridger and annotator was ſecured from the animadverſions of the author, yet he has not eſcaped the juſt cenſures of Dr ROGERS in a letter to Dr MORTIMER, publiſh'd ſoon after, wherein *the learned profeſſor is vindicated from the unjuſt repreſentations and criticiſms of his abridger.* Thoſe who chooſe a tranſlation of BOERHAAVE's chemiſtry may be ſupplyed with that by Dr DALLOW in two volumes quarto, which

which, as altered in ſome places with the author's approbation, is more correct in that reſpect, than the original: and if they would enter ſtill farther into the ſubject, there is now in the preſs another tranſlation by Dr SHAW, with ſuch notes as will neither be a diſparagement to the work itſelf, nor to the eſtabliſh'd reputation of their author. On the contrary, as one ſo much maſter of the ſubject will throw out the redundances, and contract the diffuſeneſs in ſome parts of this work occaſioned by its being in the form of annual lectures, (which BOERHAAVE wiſh'd for leiſure to have done himſelf) he will well deſerve the thanks of philoſophers and phyſicians.

To chemiſtry alſo belong thoſe three memoirs on quickſilver, which he ſent to the royal ſocieties of London and Paris, publiſh'd in our Philoſophical Tranſactions, N°. 430; 443; 444; as he has here communicated the reſult of much reading, and of laborious experiments in reference to tranſmutation, which after ſeveral repeated peruſals of PARACELSUS, HEL-

MONT, BASILIUS VALENTINUS, and other alchemiſts he was ready to conclude feaſible, the following abſtract may ſatisfy the curioſity of thoſe, who can't eaſily come at the original.

The philoſophers the moſt devoted to experiments confeſs, that chemiſtry affords the beſt inſtruments for diſcovering the origin of bodies, with their ſeveral and peculiar virtues; and whoever has converſed with the eminent chemical writers muſt acknowledge, that GEBER and the firſt alchemiſts excell'd in their explications of the nature of things. In my chemical enquiries, I perceived theſe authors agreed about the *generation* of metals from a ſort of *metalic ſeed* converting its proper aliment into its own ſubſtance, in like manner, as the ſeeds of plants and animals. Thus the vivific ſeed of gold, finding ſuitable nutriment, and a convenient matrix, with a due degree of heat, tranſforms that aliment into its own nature. The matrix or bed of gold, and other metals, is obſerved to be a ſolid, pure, rocky ſubſtance; in which, what is unaccountably

accountably ſtrange, it is found cloſe confined: The heat of the *mine* ſeldom equals that of an healthy perſon, being near the common heat of *May*, which is under 60° or generally about 50° by the * Fahrenheit Thermometer; they therefore direct the digeſting the pregnant matter of the grand ſecret in a clean ſealed glaſs with a *May* heat; but are not ſo expreſs as to the metallic aliment: and as to the ſeminal, and engendering matter, moſt agree, that quickſilver is the matter common to all metals, which, by virtue of ſome vital ſeed, is changed into a metal receiving its denomination from the ſingular property of the ſeminal efficacy; wherefore each metal, by a mature concoction of the ſaid quickſilver with the metallific energy (called ſulphur) obtains the perfect ſpecies of that particular metal; hence each metal is reſoluble again into theſe two diſtinct

* The Thermometer of Fahrenheit, recommended by BOERHAAVE as the moſt uſeful, was made of ſo ſtrong a tube filled with quickſilver, that it would bear the heat of melted lead, or even of boiling quickſilver; the tube was fixed to a braſs ſcale, No. 32 noted the freezing point, and No. 600 that of boiling quickſilver.

parts: But a turpitude inherent in quickſilver from its very origin is inſeparable from it without the utmoſt difficulty; and whilſt undepurated, it is deſtitute of the ſimplicity and purity requiſite to its being influenced by any one metallic ſeed, ſo as to become ſuſceptible of the ſingular nature of ſome one particular metal: on the contrary, when mercury is artificially depurated, it becomes a moſt ponderous, ſimple metalline liquid, neither by nature, nor art, diviſible into heterogeneous parts; in which liquid the enlivened ſeed of any diſſolved metal may compleatly multiply; in which gold melting, digeſted and ripened, yields the grand reward ſo much ſought and boaſted of by Alchemiſts *.

This Doctrine induced BOERHAAVE to attempt by various ways the conſummate purification of quickſilver. But altho' with a matchleſs perſeverance he tortured it

* Whoever is deſirous of proſecuting this ſubject, may find it conciſely and elegantly treated in the *Declamatio Academica* ABRAHAMI KAAU, *de Gaudiis Alchemiſtarum*, at the end of his *Perſpiratio dicta Hippocrati*, &c. in which declamation are ſtrong lineaments of his uncle. *p.* 49.

it by conquaſſation, trituration, digeſtion, and by diſtillation, either alone, or * *amalgamated* with lead, tin, or gold, repeating this operation to 511, and even to 877 diſtillations, what was the reſult! it appeared rather more bright and liquid, without any other variation in its form or virtues, and acquired very little, if any, increaſe of its ſpecific gravity: Indeed by conſtant and violent agitation for months together, it would exhibit a *black*, and preſerved ſo long in certain degrees of heat precipitate a *red* powder, but both theſe powders by greater degrees of heat were convertible into the ſelf-ſame quickſilver, from which they were by thoſe means prepared.

Thus to prevent the repetition of the like labours, he has given us, with great fidelity, the fruitleſs events, as to the primary view, of his own, tho' executed with ſuch due preparation, aſſiduity, and circumſpection; nevertheleſs conclude not, that theſe experiments were otherwiſe altogether unprofitable: the numerous

* An Amalgama is a paſte formed by rubbing quickſilver with one or more of the ſofter metals.

numerous corollaries, he has deduced from them, yield that ſatisfaction to a real Philoſopher, which more than counter-ballances the diſappointment in regard to other gain; the thirſt after knowledge is not ſo eaſily ſatiated, as are appetites of an inferior kind; labours of this ſort are ſeldom loſt; if all truths have their uſe, thoſe which reveal the nature of things muſt be eminently uſeful; and how inſignificant ſoever ſome of them may ſeem before their ſeveral relations are diſplayed, reject them not as lumber in the philoſophical magazine, ſince ſooner or later they uſually repay the expence of ſtorage with intereſt. This will perhaps be verified in reſpect to that operation given N° 430, *p.* 164; having met with no hint of it elſewhere, and apprehending it may ſuggeſt matter for curious ſpeculation to adepts, we make no farther apology for inſerting here the tranſlation of it.

A method of raiſing MERCURY *with a leſs heat than that of* BOILING VINEGAR.

" BY ſhaking in a glaſs veſſel an a-
" malgama of three parts mercury,
" and one part lead, a very black pow-
" der was produced; upon which was
" poured (into a glaſs cucurbit fourteen
" inches high) the pureſt double diſtilled
" wine vinegar; after evaporating the
" phlegm with a gentle heat, the fire was
" increaſed a little, but not ſo much as to
" make the liquor boil. The mercury
" paſſed over with the phlegm into the
" receiver. By an artifice not much dif-
" ferent I have ſeen quickſilver rendered
" ſo volatile, as to aſcend by the ſides of
" the veſſel in my digeſtory furnace with
" a leſs degree of heat, than that of an
" healthy perſon. Was the mercury purer
" then? it was thoroughly dry, and mix-
" ed with metal."

Theſe inſtances at leaſt favour the preſumption of our author's rivaling the juſtly celebrated

celebrated HOMBERG in this diſtinguiſhing part of his character, that *he was remarkable for extreme accuracy in all his experiments*; nor was his ſucceſs in ſeveral articles leſs extraordinary; witneſs the productions of *liquid gold*, and of *ſolid mercury*; to an enquiry about the former, he anſwered, 'twas true he had effected it, but not without ſome mixture of mercury; as to changing mercury into an immutable powder, he allowed he had ſo far compaſſed it, as that he himſelf could not revive the mercury. The moſt accurate are not abſolutely exempted from overſights, but then, they are the readieſt in diſcovering, and generally in acknowledging them.

BOERHAAVE confeſſed the nitre, which 'twas imagined he had extracted out of the *mercurius præcipitatus per ſe* proceeded only from the badneſs of a mercurial preparation of that ſort. The fraudulent preparation of it by the addition of nitre to ſave the expence of fire, might have proved in this caſe as pernicious to philoſophy, as it has in others to the animal conſtitution; for if this *mercurius præcipitatus* uſed internally,

internally does not affect the firſt paſſages by vomiting or purging, or both, it gets into the road of circulation, and then uſually ſalivates.

Notwithſtanding his intimate acquaintance with the ſublimer writers in alchemy moſt deſerving credit, he declined much diſcourſe about the ſubject of *tranſmutation*; and owned he was ſcrupulous of mentioning many of his alchemical preparations before his auditors, thro' fear of leading them into temptation: an immoderate deſire of wealth, or the laudable deſire to excell, has too often puſhed the unexperienced upon purſuits of this kind, equally detrimental to their fortune and repute for diſcretion; to obviate theſe, and the like deluſions, it is much to be lamented that death intercepted the accompliſhment of two propoſals altogether worthy of him.

The *one* was to give a chronological hiſtory of the alchemiſts illuſtrated by experiments, demonſtrating, that all of them from GEBER to STHAAL had been deluded by one and the ſame error.

error. The pains he had taken to make himſelf maſter of the contents of the moſt voluminous of them was ſuch, that he had read over carefully PARACELSUS four, and HELMONTIUS ſeven times; the latter was his favourite, as may be gathered from
p. 67. what has been ſaid of him before; but he rather eſteemed him as a philoſopher than a phyſician, having found the efficacy of his moſt applauded remedies to fall ſo very ſhort of their ſolemnly avowed ſucceſs: nor did his attachment to the ancient ſuperſede his acquaintance with the modern chemiſts: mention has been
p. 51. made already of his opinion as to ſeveral of them: But there is one, whoſe ſurpriſing diſcoveries in various other branches of philoſophy had perhaps occaſioned a leſs regard to his ſuperlative merits in this particular; BOERHAAVE on all occaſions declared Sir ISAAC NEWTON to have been the moſt accurate obſervator, as in other parts of philoſophy, ſo in chemiſtry alſo.

His *other* propoſal was to publiſh the laborious experiments, he had proſecuted many

many years on metals, particularly mercury. It might be as truly ſaid of him, as of any perſon, that he was equally happy in being poſſeſt of a vaſt collection of curious facts, and in his manner of applying them: that he had not only an ingenious attention, which derived obſervations from ſources overlooked by others, but a certain dexterity in facilitating the way to diſcoveries by ſeries of particular experiments diſpoſed with ſingular art, conducted with a ſolid delicacy, with a preciſion, which, though ſcupulous, rejected only what was inſignificant; and whilſt he generally ſtruck out ſomething new, was ever clear of oſtentation, and myſteriouſneſs, reproaches which chemiſts have too juſtly incurred. What might have been expected in this work, may be partly judged from the ſuggeſtion he has dropped after diſcloſing his ſentiment about the grand arcanum. 'This I will inculcate as "certain, you'll never repent the exami-"nation of ſeaſalt and mercury by all che-"mical tryals."

El. Chem. vi. 1. *p.* 868.

How

How little proſpect remains of engaging one to undertake the *former* taſk, alike qualified to underſtand, candid in interpreting, and judicious in deciding upon what thoſe affectedly obſcure writers have delivered? This muſt be a diſcouraging reflection to the few, who have converſed freely with our late profeſſor on theſe ſubjects: but this captivating theme is unawares tranſporting us back again from the works, to an enlargement on the character of our author.

The laſt of his publications was that work of SWAMMERDAM in two volumes folio, intitled *the Bible of nature*, (in Latin and Dutch joint columns) which owes its preſervation with the life of the author prefixt, wholly to BOERHAAVE: it is expected Dr GAUBIUS will favour the public with the addition of BOERHAAVE's own obſervations to thoſe of SWAMMERDAM in the Latin tongue.

There were prefaces to new editions of ſeveral valuable authors, beſides that to *Veſalius*, *& Auctores de lue venerea*, wrote by our profeſſor; as to, *Euſtachii opuſcula*;

opuſcula; one volume of *Bellini's* works, 4to, printed at Leyden, 1717; *Proſper Alpinus de præſagienda vita & morte*; *Sebæ Muſæum*; *Caroli Piſonis ſelectæ obſervationes & conſilia*, & *Nicolaus Piſo de cognoſcendis & curandis morbis*; lib: iii. Ludg. Bat. 1736, 4to.—To him alone we are obliged for the publication of *Vaillant's diſcours ſur la ſtructure des fleurs*, 4to. 1718, in French and Latin, with a preface under the bookſeller's name, which has given ſome handle for repartée to thoſe, who have publiſh'd his lectures without his leave; and that ſplendid work *Vaillantii Botanicon Pariſienſe*, 1727, but for BOERHAAVE, in all likelihood had remained for ever unpubliſh'd. This excellent botaniſt, when approaching death gave him concern only as it prevented his putting the finiſhing hand to his favourite work, the principal labour of the 36 preceeding years, wrote to BOERHAAVE, 15th of May 1721, to intreat his undertaking the publication of this book for cogent reaſons he was unwilling

to mention. * This requeſt was at the ſame time inforced by conſul SHERARD, to whom BOERHAAVE profeſſes, he could never give a denial; and accordingly purchaſed at his ſole expence thoſe beautiful plates containing 300 figures, which remained in the engraver's hands unpaid for.

He was author of ſome poems, as *Carmen, in Schultingum jurisprudentiæ profeſſorem*; *in nuptias Van Royen Botanices profeſſoris*; *Jambicum Petro Burmanno*; *Carmen ſeculare academiæ*, &c. at the end of BURMAN's *Carmen Elegiacum*; *D.* Feb. 8vo, 1725, in folio; This was delivered on the Day of the jubilee (celebrated at Leyden once in fifty years) in the 150th year, or third jubilee from the foundation of the univerſity, which commenced on that day: All the orations, and

* The conſul and our author were both indebted to Vaillant for monuments more durable than ſtatues, or medals, by his having denominated one new genus of plants *Sherardia*, which by its ſimilitude with the *Verbena* might otherwiſe have been called *Verbenaſtrum*, including eight ſpecies; and another BOERHAAVIA, approaching to the *Valerianella*, which might have been named *Valerianoides*, including three ſpecies.

and ſome other pieces by BOERHAAVE, were publiſh'd together in quarto at the Hague, in 1738, with the title of H. BOERH. *opuſcula omnia, prius ſparſim edita, nunc in unum collecta.* But his theſis, all his prefaces except that to the *auctores de lue aphrodiſiaca*, and his laſt diſſertation on mercury are omitted, the errata of former editions are continued, with additional ones.

SECT. III.

Of BOERHAAVE's *public Lectures, and ſome Improvements in Phyſic aſcribed to him.*

BESIDE the public lecture on botany, and the three private lectures abovementioned on chemiſtry, the inſtitutes, and practice of phyſic, all which every lecture day employed him four hours in ſpeaking; he frequently ſpent one hour more in giving a public lecture on ſome particular ſubjects.

He began theſe lectures about 1702, with a courſe of experimental philoſophy,

applied wholly to the further explanation of the animal oeconomy. None of the dictata on this topic were ever publiſh'd, we believe, unleſs by his pupils in their theſes.

In 1709, during the ſummer he demonſtrated the plants in the phyſic garden, and in winter explained the ſtructure of them.

In 1710, the ſubject was the method of ſtudying phyſic; and in 1719, a book was publiſh'd at London, intituled, BOERHAAVE's *method of ſtudying phyſic*; in which are ſo many blunders and abſurdities, owing to the editor, that none of all the ſuppoſititious works is more intollerable, than which otherwiſe none would have been more uſeful, as BOERHAAVE had delivered the moſt advantageous order of reading the beſt authors to form a compleat phyſician; pointed out their particular excellencies and defects, and deſcribed the beſt editions of them. An edition was in 1726 and 1734, printed in Latin in large

12mo

12mo at Holland, tho' with the name of London.

In the two following years he treated on the operations of medicines in a manner different from any author before him, claſſing them as it were anatomically, that is, as they act upon the ſolids only, the fluids only, or on both (ſeparately, or at the ſame time) or laſtly, as they ſpecifically reſpect particular parts or humours. A very imperfect copy of the *Dictata* tranſlated into Engliſh, was publiſh'd in 1720; beſides other defects, ſo wretched was the tranſlation, that little of BOERHAAVE appears in the work. Such dangerous miſtakes are committed in the doſes of ſome medicines, that upon peruſing it, he told an Engliſh gentleman who procured him the copy, that the editor had made him ſay things he never thought, and ſeveral contrary to his opinion and knowledge; beſide, ſo many of the doſes were miſtaken, that he trembled to think what ſome patients might ſuffer, if their phyſician ſhould rely on the authority of this exe-

crable book, on which, it would be his misfortune, if his name conferred any credit. And altho' a Latin edition from ſeveral copies collated, was publiſh'd three years afterwards at Paris, with a ſpecious preface, yet it is not much more correct, than other of the ſurreptitious productions, eſpecially in the mathematical part; but the ſecond edition at Paris, 1727 in 12mo, or rather the Engliſh edition 1740, from that, with additional notes by Mr MARTYN, merits recommendation to thoſe, who are unacquainted with the ſubject thus treated.

At length he was ſo exaſperated by thoſe publications, that he petitioned the States for a placart to ſuppreſs them, and inſerted an advertiſement in the Leyden Courant to this effect.

WHEREAS ſome bookſellers of this and other countries, for the ſake of lucre only, have highly injured me, and ſcandalouſly cheated the public, by printing in my name ſeveral books, from lectures procured (as they pretend) from my auditors,

auditors, who were it ſo, make a very ill requital for my beſt endeavours to ſerve them; I find myſelf obliged to declare, that I own none ſuch for my works, being fraudulently publiſh'd without my knowledge, contrary to my will, and full of ſuch groſs and dangerous miſtakes, as tend equally to my diſcredit, and the reader's prejudice, who relies on them; and that likewiſe I am making diligent ſearch after the authors of this injuſtice, in hopes of obtaining legal ſatisfaction for the ſame, and of preventing impoſitions of this kind for the future.

HERMAN BOERHAAVE,

Profeſſor in their noble High Mightineſſes Univerſity of Leyden.

9th October, 1726.

In 1713, he diſcourſed on hearing; in 1714 on viſion, and afterwards on the origin of man; he conſidered the objects of thoſe two faculties, light and ſound, with the diſeaſes of the eye and ear. The difficulty of giving the mathematical diagrams with ſufficient accuracy, has per-

haps diſcouraged the publiſhing the *Dicta-ta*, notwithſtanding there are manuſcripts, from which a treatiſe might be compoſed ſuperior (in what concerns medicine) to any other upon thoſe ſubjects.

In 1715, he deſcanted on reſpiration.

Afterwards there was a reſpite to his public lectures for two or three years.

From 1718 to 1728, he dwelt on the four elements, fire, air, water, earth; the ſubſtance of theſe lectures he has given in the theoretical part of his chemiſtry. *Elementa chemiæ*, vol. I. p. 126—668.

In 1729, he was upon the ſtone of the kidneys and bladder. †

The ſubject which engaged him the ſix next enſuing years, was, the diſeaſes of the nerves; ſeveral of his ſentiments on this head are agreeably repreſented by Dr FLEMYNG in his *Neuropathia*.

During 1736, 1737, he explained the action of the heart.

The laſt public lectures in 1738, were on the nature and qualities of blood.

'Tis

† The dictata on this ſubject are publiſhed this year, intituled, HERMANI BOERHAAVE *prælectio publica de calculo.* 4to.

'Tis hoped, Dr VANSWIETEN will oblige the world with the ſubſtance of thoſe which have not appeared in print, when he ſhall have publiſh'd the *Dictata* on the aphoriſms before-mentioned.

FROM all that has been ſaid, ſome conception may be formed of the merits of our author; but how inadequate to theirs, who were his auditors, conſulted with him, and have carefully peruſed all his works? They could not but admire his ſingular penetration in diſtinguiſhing at the firſt ſight of a patient ſometimes thoſe diſtempers, which are not ſo immediately diſcoverable by the ſigns and ſymptoms uſually attended to; with pleaſure they obſerved this, and many other deſirable faculties, unaccompany'd with any preſumptuous confidence in his own abilities, or with an affectation of quick diſcernment, which might have been ſufficiently countenanced by the reputation of great

experience,

experience, and full practice: No, he was exceedingly circumſtantial in his examinations of the ſick, being too conſcientious to rely upon haſty conjectures for the gratification of vanity, or thro' indifference, or to ſave the time and trouble of a thorough inquiry, when a good degree of probability might reſult from it.

In chronical caſes, what is not very cuſtomary with phyſicians, he uſually inſpected the internal part of the eyelids, the *caruncula lachrymalis*, and the gums; the blood veſſels appearing here moſt naked; ſometimes he required the patient to try how he was affected by various poſitions of the body, to hold his breath as long, and exert his voice as loud as he could; according to which obſervations, * he partly judged of the plenitude of the veſſels, of the progreſs of obſtructions in the glands, of ſcorbutic taints in the fluids, and of the affections of

* A collection of all particulars of this kind is deſirable.

of the cheſt, and its contents, the grand organ of ſanguification.

Altho' ſome of his preſcriptions were ſo ſimple, as to ſeem trifling, and others ſo rough, as to threaten inconvenience, yet, where the caſe was curable, they ſeldom failed of anſwering the intention. He was neither condemned for timidity nor temerity, none knowing better how to appropriate and temper the ſevereſt, as well as to exalt the efficacy of the mildeſt medicines.

A confident aſſurance of ſucceſs, or the denouncing a caſe deſperate, without evident reaſon, generally does, and always ſhould prove not leſs diſgraceful to the phyſician, than detrimental to the patient; whilſt nothing procures more reputation to the former, than juſt prognoſtics. This BOERHAAVE experienced to his credit as well as the ſagacious RADCLIFF; but the world is much more indebted to the former for the frank diſcovery of his art in his lectures, and writings; in ſuch writings, as ſhall do honour to his name, when magnificent edifices with glaring inſcriptions

tions to immortalize their founders ſhall be buried in oblivion.

Illiterate men may know more, than they can expreſs or explain to others; but an excuſe drawn from thence for concealing any uſeful obſervations or diſcoveries in their art, muſt ill become *Thoſe*, who by their education, and profeſſion ſhould be maſters of the learned languages, as well as of their own.

It will now perhaps be univerſally granted, that our profeſſor has indeed ſupplied us with the beſt ſyſtem from an unparallel'd fund of medical learning happily digeſted. But leſt any one ſhould reſt here, and inconſiderately rank him among compilers only, or diſpute our obligations to him for more, than the *methodizing* of his compoſitions, we beg leave to aſſert our author's ſuperior claim by adverting to a few inſtances, which at preſent readily offer themſelves out of the many that might be gathered from his writings, and dictata, manifeſting him an original in numerous articles.

His

His judicious reſtriction of the uſe of mechanical reaſoning in phyſick, has been repreſented above. The doctrines of ACID and ALCALI, of efferveſcence, fermentation and putrefaction, were heretofore no leſs in vogue for ſolving Phænomena; altho' the very terms before him were unſettled and miſapplied. *Alcalys* were ſometimes reputed *Acids*, and theſe miſtaken for *Alcalys*; *efferveſcence*, *fermentation*, and *putrefaction* from their ſimilar inteſtine motion, were frequently confounded without regard to the diverſity of their cauſe and effects. *Volatile ſpirits*, whether vinous or alcalious, were ſuppoſed by eminent writers to be of a like ſulphureous nature; and what is more abſurd, animal ſpirits were thought to participate of the like qualities. Under ſuch miſrepreſentations he found theſe momentous matters; but whoever compares the hiſtory of *Them* in his chemiſtry with their application in thoſe chapters of his Aphoriſms, where he treats of the moſt ſimple and ſpontaneous degeneracy of animal humours, muſt confeſs, that thence both philoſophy

philoſophy and phyſick receive conſiderable improvement.

The explications of the functions of ſeveral Viſcera in the phyſiological part of his Inſtitutes are more ſatisfactory as well as ſuccinct, than in any author before; particularly of the ſtomach and ſpleen; how numerous and various were the cauſes aſſigned of digeſtion and chylification? After weighing them all, he ſhows how much they really contribute to that work. The uſe he attributes to the ſpleen is ſuch, as conſiſts with an animal's continuing tolerably well for ſome time after the extraction of it.

Who before demonſtrated the Heat of an animal body to proceed altogether from attrition between the fluids and their veſſels? Or obſerved, that air, whilſt mixt with our circulating fluids, looſes the elaſtic property of external air, having its particles ſo ſeparated, as to prevent the exertion of their mutual repellent force, which they regain when collected upon ſtagnation of the fluids? The ſurprizing Phænomena of heated air, in which an animal

animal dies within a few minutes of a malignant almoſt to a peſtilential fever, were diſcovered by experiments made at his requeſt, and according to his direction. ‡

The chapter on the *internal ſenſes* ſhows the utility of metaphyſics applied to that ſubject. Thoſe on *ſleep and nutrition* are in a manner new: As to the ſuperior excellence of the four remaining parts of his Inſtitutes, *Pathology*, *Semeiotice*, *Hygiene*, *and Therapeutice* it ſuffices to alledge the uſe made of them by that very learned and ingenious phyſician Dr ARBUTHNOT in his treatiſe on diet, *&c.*

In the chirurgical part of BOERHAAVE's *Aphoriſms*, the chapters on *obſtruction* and *inflammation* are deſervedly accounted original; Thoſe concerning a *ſcirrhus*, *cancer*, and the *diſeaſes of the bones* afford many important notices, which eſcaped other authors. Who before him obſerved the *membrana adipoſa & celluloſa* to be the ſole ſeat of all ulcers, ſinous and fiſtulous? In ſhort, his whole ſyſtem of *ſurgery*

‡ Elementa Chem. vol. 1. p. 275.

ſurgery is not leſs accurate than compendious.

His account of the *bile* and of *bilious diſtempers*, of the *hepatitis*, various kinds of *jaundice*, of *melancholy*, and *hypocondriacal diſorders* confeſſedly ſurpaſſes, what was extant before on thoſe ſubjects. How appoſitely is that obſcure tho' true doctrine of HIPPOCRATES concerning the *atrabiliary humour* confirmed and illuſtrated by our author's obſervations and application of the later diſcoveries in anatomy and chemiſtry? The ſtrongeſt indications of a true practical genius are conſpicuous in the compoſition of thoſe chapters.

That on *a fever in general* is not equalled by any thing on the ſubject; what author before had given an unexceptionable *definition* of a fever? not even BELLINI himſelf. The *proper uſe* of the *bark in intermittents*, and the *chronical diſorders* occaſion'd by the *abuſe* of it, were by no writer ſo juſtly conſidered, no, not by the immortal SYDENHAM. The deſcription and cure of the whole tribe of *inflammatory diſeaſes* delivered by him

him will probably remain unalterable, as human nature.

Under the head of *chronical* diſeaſes, the ſubject of the *rabies canina*, or what relates to the *bite of a mad dog*, is handled in a moſt maſterly manner: although he was not ignorant of the many applauded *ſpecifics* in this caſe, of all others the moſt tremendous, yet, from the origin of medicine (ſays he) almoſt all the Principal of the profeſſion have lamented the little dependance, that can be ſafely had upon them, ſince * *after the bite, ſcarce any ſurprophylactic*, or preſervative, *is diſcover'd*

* This ſeems the more ſtrongly expreſs'd by way of incentive to ſome new diſcovery. Notwithſtanding two of our moſt eminent phyſicians have ſince introduced the uſe of the *pulvis antilyſſus*, it has not been found ſo very ſucceſsful, eſpecially when the diſtemper is at all advanced, as that the general method of cure in BOERHAAVE's Aphoriſms can be prudently diſpenſed with. What ſecurity may be found from the uſe of the *coronopus*, *i. e.* buckſhorn-plantain, or ſtar of the earth, or from mercurials, and veſſicatories, profuſe and repeated bleedings, in removing a confirmed hydrophobia, further obſervations muſt determine, whilſt thanks are due to Thoſe, who have publiſhed the firſt ſucceſsful trials.

againſt the hydrophobia, or ſymptom of dreading water; *and ſince there has been no credible inſtance of a cure after the invaſion of this ſymptom.* Our profeſſor had the reſolution to attend ſeveral in the hydrophobia to their laſt moments, and his deſcription of their agonies was ſo pathetic, that one of his pupils, no puſillanimous man, proteſted he wiſh'd to have been abſent during that part of the lecture, and would never hear it a ſecond time.

What method * of treating the *gout* has been found ſo ſafe and ſerviceable, as that recommended by him?

Who has ſo accurately deſcribed, and diſtinguiſhed the *different kinds of ſcurvy*, requiring a cure as different, and oppoſite to each other, as any the moſt contrary maladies? But it would exceed the brevity here propoſed to touch upon more, than what ſhould not be omitted in this place, becauſe ſo univerſally acknowledged; that both

* It may be ſeen at large in Dr BENNET on the gout.

both in the *great* and *ſmall pox* * we have received new light from his obſervations, and experienced a more ſucceſsful treatment of them from his diſcipline.

Conſidering the *ſmall-pox* as a *cutaneous inflammation*, joined with a *contagious eruption*, and therefore requiring for the moſt part the general remedies for the † former, with thoſe that are eſteemed ſpecific in the latter, he was naturally led to ſuch a method, as enabled him not only to mitigate the ſymptoms, and ſo leſſen the danger of this diſtemper, but ſometimes even to *prevent* it alſo, that is, *its coming to an eruption*, by ſubduing it on its firſt attack,

* See Dr THEOPHILUS LOB's treatiſe of the Small-pox. Preface, § 25. Treatiſe, chap. 9.

† Notwithſtanding Dr LOB diſapproves and endeavours to explode this general antiphlogiſtic method of bleeding, &c. it was ſo far from offending our author, that he gave the Doctor leave to prefix his opinion of his book upon the whole to this effect: 'I have peruſed, and approve of Dr LOB's 'treatiſe (in Engliſh) on the ſmall-pox, replete with 'true medical ſcience, and likely to be of much ſer-'vice to mankind.' Leyden, 7th of Dec. 1733. H. BOERHAAVE.

tack, when all the ſymptoms uſually preceeding the eruption have appeared in a proper ſubject, who had been in the way of the infection in a ſeaſon, when the ſmall-pox was epidemical; and he doubted not that a variolous fever might be obſerved by others, uſing the like regimen, to be ſometimes removed before it produced a variolous eruption. An article reſpecting this diſeaſe concerns the public welfare too much to be ſuppreſt, ſince our author was ſo unfortunate as to differ in this point from great authorities, from thoſe, to which in other caſes he paid a conſiderable deference.—It is the *fatal conſequence*, which always enſued upon his ſeveral trials of *the purgative method in the ſecondary fever of the confluent ſmall-pox*, although conducted with all the cautions recommended by the patrons of that practice.

His obſervation, that the ſeat or *ſole nidus* of the *venereal venom*, as of ulcers and fiſtulæ, is the fat, oil or marrow; that the depredation of this poiſon is confined to the *panniculus adipoſus & membrana*

cel-

cellulosa; that the flesh, bones, *&c.* are not destroyed by the venereal *harpy*, otherways then as they depend upon the said membranes, or are corrupted, instead of being defended, by the unctuous humour (destined to lubricate them, but now) rendered corrosive from the infection; his accounting thence for the impossibility of saving the bones of a single lamina or table (without any diploe or cavity) when tainted by that virulent matter; these considerations serve to solve many of the heretofore unaccountable *phænomena* in this disease, and furnish a clue for tracing the progress of the venom through its intricate mæanders. Further, he mechanically explains the operation of mercury in curing this malady; and sagaciously observing the extent of its efficacy in these cases, not to exceed the road of circulation, indicates the reason, why a salivation will neither answer, when the diploe or the marrow of the bones is infected, nor in a gonorrhæa; much less after the dissolution of the blood by the sweating method with *guaiacum*: if his regimen

men for extirpating this diſeaſe has been thought too ſevere, or his warineſs in preventing a relapſe, to proceed from too ſcrupulous apprehenſions about it, theſe were errors on the right ſide at leaſt; whereas the too common practice he condemns, "of "applying Exſiccatives to the *ulcuſcula can-* "*cri dicta*, before the virulence is enerva- "ted, or eliminated by proper internals "and fomentations," has been ſooner or later attended with diſaſtrous conſequences; by our author's caution, the cure, if tedious, is ſure, and permanent; by the contrary management the repelled virus diffuſes itſelf through the habit of the body, and, after an *imaginary* ſpeedy cure, the diſtemper ſhows itſelf in a worſe ſhape, not then to be eradicated in our climate under a month's *Ptyaliſm*.

Several obſervations * might be added on ſome particular qualities of medicines, concerning which Others were ſilent before Boer-

* It is probable an account of them will be communicated in Dr VAN SWIETEN's *Commentaria in Aphoriſmos* above-mentioned, p. 119.

Boerhaave gave Lectures in chemiſtry, although ſince, They have got the ſtart in print; as, that Æthiops mineral, prepared in the manner he directs, (El. Chem. vol. II. p. 493.) however well triturated, is too groſs to enter either the lacteals, or abſorbent veſſels; that the *internal* uſe of *ſaccharum ſaturni*, or ſugar of lead, formerly preſcribed by eminent phyſicians, (and lately recommended by an Engliſh writer) is attended with the moſt pernicious effects, being a ſure, tho' ſlow, poiſon; that vinegar made blood-warm, and mixt with the blood freſh drawn before it cools, diſcovers its *attenuating* * quality, by preventing and reſolving coagulations. (El. Chem. vol. II. p. 213.) but enough has been ſaid to juſtify the ranking our Author among the improvers of the Science.

In ſhort, do not his writings manifeſt, that every branch of it has flouriſhed under

*Dr Freind and Others, who have attributed a *coagulating* quality to vinegar, have been miſled probably by haſtily concluding, that the medicinal qualities of all acids, whether vegetable, or mineral, were much alike.

der his care? — After comparing even our repreſentation of *Them*, with that of his *character*, let the learned, and impartial decide, whether hiſtory has recorded one more meritorious in his profeſſion ſince the *Coan*, than this *Batavian* HIPPOCRATES, conſidered either as a *preceptor*, or an *author*.

An inexhauſtible fund of knowledge, a genius admirably adapted to the province of teaching, and a taſte for every improvement of the mind, attended with unblemiſhed virtue, qualified him for diſcharging the numerous duties of his ſeveral profeſſorſhips, in a manner, which not only eclipſed the glory of his predeceſſors in that univerſity, famed as they were for phyſic, but will probably exceed the utmoſt endeavours, if not the very ambition, of his ſucceſſors.

An exquiſite diſcernment accompanying the ſevereſt application to books, practice, and experiments, is apparent throughout thoſe ineſtimable works, which compleated his reputation, and intitle him to the grateful commemoration of poſterity.

DISPUTATIO

DISPUTATIO MEDICA INAUGURALIS

[Nonnihil contracta]

De Utilitate explorandorum in Ægris Excrementorum ut Signorum,

Quam Eruditorum examini ſubjecit

Herman Boerhaven Batavus

Julii die, 4to.

HARDEROVICI 1693.

SIgnum non poſſe clarius haberi & certius interioris ægri conditionis videtur, quam ex accuratiſſimo examine talis fluoris, qui forte ante tempus breviſſimum una cum reliquo oceano omnes inundavit corporis plagas; quales, quum uno plures occurrant, utilitatem, neceſſitatem, & explorandi cujuſq; quoſdam modos referam: principem hic rogat locum *Urina*, quæ ex tota maſſa ſanguinea diſcedens, neceſſario de quavis, quam præterlabebatur, parte aliquid toti minus connexum, quam ut rapido torrenti reſiſtat, ſe-

cundum mechanicas leges vehit ſecum, ſibi motu vario & inteſtino permiſcet, ad ſuum uſq; cribrum advehit, urinarum viis deponit. Quis inficias ibit, nihil lotio ineſſe quod non fuit antea in ſanguine, iis exceptis quæ ſub ſenſus non cadunt? Quum ergo reliquorum alma mater ſit & nutrix ſanguis, cujus apprime juvat in facienda medicina familiaris cognitio, quanti momenti urinæ examen jam ſatis apparet; Nunciat ſcilicet fideliter, quæ ad ſanguinem componendum concurrant, quomodo agant inter ſe, quid deſit, quid abundet, adeoq; vere, quantum hic ſperare licet, indicabit, quæ res addendæ, quæ detrahendæ, & quando, & qua copia; in quo vera medela conſiſtit; mechanice idem firmat, et experientia: chemia namq; docet ex humano ſanguine ſpiritum ſubtilem admodum, ſal fugax, ſal quietum, duplex oleum, aquam & inſipidam terram *damnatam*, ut aiunt, affatim ſuppeditari; verum eâdem opera novimus urinam dare terram, aquam, ſpiritum, oleum, & ſal, quod ſenſu & prima fronte non adeo de ſale ſanguinis diſtinguas, quamvis in medendi vi maximum diſcrimen PARACELSUS & HELMONT notarint. Poſſidet itaque omnes, quas ſanguis, urina partes, & quia hæc ab illo ſecernitur quotidie, quo in cruore quædam prædominatur, eò & in

lotio

lotio ſedes ſibi vindicabit majores, ut infra demonſtrabo per experientiam; quo plures igitur æquali ſanguinis maſſæ vel ſpiritus v. g. vel ſales inſunt, eo adeſſe æquali percolatæ ſanguinis parti plures. Ad ſcrutandi modos, eum primo tentandum puto, qui ejus pondus ſpectat ope phialæ notatæ, baroſcopii BOYLEI, &c. ratione urinæ ſanæ collatâ, ex ponderum differentia urinarum diverſitatem diſcens, viſurus ſimul, an ægri lotium, & qua quidem proportione peccet; quia graviſſimæ in lotio & cruore partes terra, aqua, oleum, ſal fixum, leviores, ſal fugax, & volans ſpiritus, tutiorem conjecturam reddent, an in ſanguine craſſities, an tenuitas adſit, & cui morbus aſcribendus, quomodo curandus: an ſal fixum, terra & aqua, an vero ſpirituum, ſalis volatilis, tenuiſve olei copia abundet. Prudens hinc conjiciet habita regionis, tempeſtatis, ætatis, ſexus, diætæ, horæ, indoliſq; ratione, an medicamentis excitantibus, an ſoporatis, recreantibus & dividentibus, an aquoſis & diluentibus uti res exigat; ut apud HELMONTIUM habetur. Ante hæc experimenta injungatur ægro, per denſum valde & mundum linteum lotium, dum reddit, tranſmittat: quo, ſic notum ſit, an carunculæ, lapides, arenulæ, filamenta, pus, ſanies, limus, & qua reddantur copia, quo co-

lore & figura; hinc morborum ſedem naturamque detegendo præivit HIPPOCRATES, Aph. iv. 74-81. vii. 34, 35, 39. Hoc autem, ubi non agendum curatur, decipi poterit ignorans, creſcere ſæpe in matula, quæ in corpore generata non fuerant; at in linteo detenta juxta indolem examinata morbos adverſus magnos dant remedii indicium: ſed interim aliam ejuſdem depravatæ urinæ partem lento cinerum, aut fervidæ calori ad libram exploratam imponat, quo poſſit aqua ſua & ſpiritu cum maximè ſoluto ſale liberari; maſſa poſt evaporatas has manens partes rurſus ad menſuram revocetur, datura partium volatilium & duriorum in lotio proportionem; dein vero aqua deſtillata ſal ex hac maſſa ſolvatur & in filtro maneant denſiſſimæ olei & terræ notæ hac opera partes; tranſeat cum affuſa aqua ſal, quod deductâ rurſum calore aqua ſolum reſtabit: unde egregie innoteſcit medico, quæ, quanta, & qualia medicamina adhibere neceſſe ſit; dummodo varia prius & artificioſa experientia conſtet, quomodo in variis caſibus, morbis, ætate, tempore, &c. hæc obtinuerint. Sed tentamina menſtruorum acidorum & alcalinorum ope expeditius longe inſtitui queant juxta incomparabilem BOYLEUM; urinæ autem aquea pars leniſſimo *balnei* te-

pore

pore in auras ante commixtionem expellatur, ne obtundat liquorum actionem; facta miſcela obſervare licet, an, quanta, & quam diverſo cum effectu excitetur lucta. Cæteros autem modos elegantia pariter ac induſtria ſuperabit ſequens. Lotium ſani veſpere præcedenti modice poti matutino ante jentaculi vel potus uſum tempore redditum, ſatis magna collectum copia, infuſum capaci valido & rotundo vitro, utcunq; calefiat, ut aer aliquantulum expellatur; mox vitrum ſigillo Hermetis obſignatum in leni tepore ſpatio 4, 5 vel 6 menſium ſervetur, quo tempore elegantes colorum ad egregie rubicundum mutationes obſervantur; dein revulſo ſigillo, ocyus altæ cucurbitæ galeâ illico glutinis ope muniendæ fortis infuſa urina levi calore balnei committatur deſtillationi in recipiens capax: Separata videbis ſpiritus, ſal volatile, & quod alembicum ſimul ſcandit oleum fœtens, ſed tenue, ab aqua, terra, limo, oleo gravi, ſale fixo, ſulfureq; fœtido in fundo manentibus; expenſis accurate inter ſe his partibus, unaquæque ſeorſim in ſuas dividi poterit partes largitura ſpiritum & ſalem album ſeparatos ab oleo; dein limoſa aqua in cucurbita reſidua ſuo ſpolietur humido, quo ad bilancem expenſo, quod in fundo remanet aqua deſtillata calida

affuſa bene digeratur; hinc ſeparato per ſeparatorium nitidum oleo per craſſam tranſudet chartam, & quicquid in charta remanſit repetito tractetur opere, (ne ſalis quiddam reſtet) evaporentur hæc ſimul leni igne, & ſal ſiccum album, quod ſupereſt, ad exactam ilico menſuram revocetur, ut & terra quæ ſupereſt & oleum; habebimus hoc modo, ſi ſæpenumero idem fiat, ſtabilem harmoniam horum quæ in lotio ſunt, & peracto cum cruore hoc labore veram ſanguinem inter & urinam cognationem. Sed ſimul cave credas nil aliud hinc utilitatis! quia egregia medicamina te adeptum, quorum vix digne quis proſequatur laudes, ſcias; quibus itaque actis, ægri, qui chronico laborat, urina eodem tractata modo, quantum & in quo aberret, docebit, unde ſuppeditatis e ſanguine & lotio medicamentis ſapienter ſanari poterunt. Dolendum modo in acutis, qui non diu eodem in ſtatu, idem accurate adeo non poſſe tentari; fiat tamen, quantum licet bene: Dein oculis objecta urina ægri iis cautelis & tempore obſervetur, ſecundum quæ, ubique obvia, de coloribus, pelluciditate, ſupernatantibus nebulis, & coronis, innatantibus partibus & ſubſidentibus rite pronunciare licet. Odorem lotii non abhorreas; notatis enim odorum

diffe-

differentiis in his illisve morbis, nonne certius de ſimili judicabis malo? Juvamen attuliſſe quædam medicamenta nota obſervatum eſt, dum hoc illove prædituм odore minxit quidam lotium, nocuiſſe alia; ubi jam poſtea ſimilis occurrit, cæteris paribus quomodo ſit progrediendum, ut ad Cynoſuram diſcemus. Neque tenerior guſtum lingua reſpuat, ſi certior adhuc eſſe cupis; fecere id olim inſignes, faciunt quibuſdam idem locis medici. Atque his quidem & ingenioſo pluribus excogitandis modis inſpicere oportet lotium rem maximi in morbis momenti, ut ab eo, qui mihi omnium inſtar, didici HIPPOCRATE, quem ut Aphoriſmos modo agam, *vid.* Aphoriſ. i. 12. iv. 47, 69, 72 & ult. item vii. 31, 33 & ult.

Verum ad *Alvi* deinde *Fæces* animus vertendus; quæ, quum ex cibis & potu, quibus ex glandulis oris ſaliva, ex œſophagi & ventriculi glanduloſa tunica depluens liquor intime permiſtus fuerit, bilis ſucciq; pancreatici in duodeno affluxu irroratis, arteriarum tranſudante meſeraicarum in inteſtina per horum glanduloſas tunicas rore ſubactis, ortum ſuum ducant, adeoq; ſuperfluum ſint baſios totius Animalis, nihil omnino proficit has negligens, vel faſtidiens, ſordes Practicus. Si enim illæ

ingeſtis deponuntur ſimiles alimentis, nonne dabitur peccare ſalivam, motum muſcularem ventriculi, ejuſdem ſuccum acidulo-ſalſum, bilem, pancreatis & meſeraicorum ſuccum? quod ignorans, quonam concludes ſigno felicius? Si nimis liquidæ pro re nata, an non magnum nimis ſeri ab ſanguine diſceſſum, & per vaſorum oſcula exilia fluorem indicant, vel bilis ſuccum liquidiorem, & ſtimulos? Durior earum moles omni re certius bilis minorem vel affluxum vel vim, lymphæ nimiam ad diverticula converſionem, fermenti (ne nimis hæc feriat vocula mechanizantes) inertiam, vel vaſorum & maxime in craſſis inteſtinis, ut ſæpe fieri natum, obturata oſcula liquidò deſignat. Minor illarum copia, vel nimiam tranſpirationem, vel timendos inteſtinorum morbos, vel patentia immenſum lactearum venarum ſemicruda abripientium ora, & hinc lethales morbos præſagiet. Majori ubi quantitate obtinent, præſentem ſanguinis & ſucci lymphatici præcipitationem, ſerpentem inteſtinorum motum auctum, furibundos animales ſpiritus, futuramq; ni curetur, ἀπεψίαν nunciant. Quæ quidem plenius intelligemus animadvertentes quinque imprimis ex meditullio corporis immitti fœcibus liquores jamjam memoratos, ab

quorum

quorum conditione valetudo & vita dependent, ſalivam nempe, &c. In hoc proinde excremento cuncta fere ſigna omnium in corpore liquorum reperiunda dantur. Si enim colore flavius, ſapore (ne horreas!) amarius, mole liquidius, copia majus, odore non admodum moleſtum, & ſenſu in inteſtinis eſt calidius; concludendum bilem oleoſam & inflammabilem peccare; hinc indicabitur hanc temperandam, vincendam, educendam. Si fœtido halitu effuſo & cadaveroſo, colore fere atro, mole liquida, copia ingenti, torminibus, virium proſtratione, & conſiſtentia inæquali vexat; tum vero ingens vitæ periculum, & putrefacta ſcatentem ſanie ſanguinem, ſpirituum vitalium depravationem, humorum ſolutionem a compage ſua, & inſtantem fere, niſi ſuccurratur, mortem annunciat: Sed & eadem docet operâ reficiendas aromaticis & ſpirituoſis vires collapſas, putrefactioni liquorum valide reſiſtentia, putrefacta expellentia, eroſa lenientia, & rupta conſolidantia, adhibenda eſſe medicamenta. Si viridia, nares acredine ſua ferientia, guſtui acido-auſtera, mole plus dura, dolore lancinantia conſpexeris; ilico acidum, & quidem auſterum ex chemiæ principiis certis abundare evincet; hinc gnarus ſalia figentia, dividentia, lenientia,

debito

debito uſurpanda modo, atq; tandem malum educendum. Sed ſi alba, dura, pauca, inſipida, & urinis comes croceo-rubicundis egeſta fœx; obſerationem in veſicula, ductu, vel vaſis in hepate felleis, vel bilis volatilitatem magnam, & ſimul ad officium inertiam demonſtrabit; atq; iterum medicinæ per aromatica acido-ſpirituoſa, diaphoretica & oleoſa faciundæ ſcopum dabit. Longe plura circa has ſordes, abluendo vel elixiviando, variis affundendo liquoribus chemicis, putrefaciendo, digerendo, & deſtillando inſtituenda experimenta enarrare poſſem, niſi horum apparatus ex ſupra dictis colligi facile poſſet. Vides ſaltem ut puto nauſeabundos, qui tam ſordida ruſpari faſtidiunt, vix appellandos medicos. Atq; his rurſus ſatis congruè HIPPOCRATES. Aph. i. 23. ii. 14 15. iv. 21. 24. 26. vii. 30, 67. maxime autem i. 12.

Saliva ſubſequitur chemico ſæpe examinata labore, quæ mihi aquæ maximam, ſpiritus vinoſi (qui egregie odore ſuo ſe naribus prodebat, dum ad faciliorem partium ſolutionem eam digerebam hyemali tempeſtate) minorem, ſalis volatilis vix ab iis ſeparandi minimam, fixi autem magnam ſalis copiam exhibuit. Fluore hæc, ſapore, odore coloreq; ſe ipſam manifeſtat

feſtat; Quando enim ablata aquæ, quæ illi copioſe adeſt, portione, inſipida manet, inertem eam plane neq; digerendum rité cibum: Sano enim tum acido-ſalſa percipitur, ut ſæpe ſum expertus; quod dum tamen ab ea exigitur quam maxime, fruſtra cætera expectabuntur proſpera: Sale igitur ammoniaci in flores acto, elixire *Paracelſi*, eſurino liquore *Zwelferi*, ſpiritu ſalis, nitri, ſulfuris ſimilibuſq; cibi miſceantur caute. Si tenax glutinoſaq; evaſit, lympha ſanguiſq; indicabuntur lentiores; hinc ſtagna putrida, ciborum mala digeſtio, artuum laſſitudo, atq; plurium malorum mater fœcunda præſens vel futura intelligetur; atq; ideo denuo ſpirituoſis, aromaticis, digeſtivis, diaphoreticis, attenuantibus, ſalibus volatilibus, acrioribus, & his cognatis utendum ſaliva præſcribet. Si vehementius leniter evaporata cum ſale alcalino ebulliat, acido, ſi cum hoc, alcalino abundabit, & medelam indicabit. Ubi majori effluit copia, ſalivalium nimis patentes fauces, ſeri nimiam præcipitationem, ſanguinem magis diviſum, & hinc pendentes morbos evincet. Ubi minori quantitate effluit, cæteris paribus contrarium concludetur, atq; alia erit inſtituenda medela. Sed pauca de ſingulis.

En

En vero ſudorem (excrementum, quod ſano nunquam depluit, ſed ſemper moleſtiam, dolorem, morbum, æſtum, viriumq; proſtrationem indicat) omni examinandum labore: Eſt hic humor ab ſanguine diſcedens, lymphatico ſucco, ſpiritibus,& liquore nervoſo ſæpe abundans; hic in acutis ſua varia præſentia ſæpe morbum ſolvit, ſæpe inſtantis jamjam lethi nuncius indubitatus: nunc ægrum liberat, vigorem, vires, & requiem procreans, nunc exiguo temporis curriculo adeo debilitat, ut nihil magis; atque ideo tam hoc ſœculo quam olim apud priſcos morborum criſes præcipuæ hinc ſumptæ, definitæ. Quia vero non ea copia accipi poteſt, qua urina, licet hanc ſæpe ſuperet, quoniam ſcil. non uno arctatus canali, ſed millenis diffuſus vaſculis diſpergitur quaquaverſum, guſtu ſaltem, odore & viſu explorari poterit, ut & tactu, ſua ſit interim TACHENIO fides. Odorem ægro ex corpore ſpirantem multa docere, vel plebs docet; poſſe tandem ad certa genera revocari ſpes adeſt magna. Saporem, qui ſalſa, dulcia, acria, amara, inſipida diſtinguit multum hic valere ratio & experientia clamant, uti SYLVIUS evicit, qui hinc humorem peccantem detegens, egregiam præſtitit infinitis medelam. Colorem variare novimus varie, id autem ſemper ſingulari

cauſæ

cauſæ deberi juſte concludimus, atq; ideo vel hinc praxi utiliſſima poſſe obſervari non deſperamus. Tactus vero auſteriora, liquidiora, viſcoſa, tenacia, & pinguia ſuo modo examinans varios diſcernet morbos, quorum quidem omnium gratia debebitur ei, qui certis obſervationibus lucem hic accendet, ſequens magni *Coi* veſtigia, quem legito cum cura Aphor. i. 12. iv. 36, 37, 38, 41, 42. vii. 61. viii. 4. ex citatis locis vix credibile lumen medicinæ faciundæ accepturus.

Quæ porro vel *Tracheæ nisu*, vel *ſponte excernuntur ex gutture*, quo arctius contemplor, eo anxius examinanda puto; quia ni id dextrè fiat, perdi ſæpe poteſt bono medicamento ſed intempeſtive præſcripto æger. Quando itaq; tenuis olei æmula modice per exigua glandulaſæ in aſpera tota arteria tunicæ foramina, & glandularum tam in ſuperiori *Œſophagi*, quam aſperæ parte poros lympha exſtillat, qualem in omnibus brutis & cadaveribus diſſectis vidi, nulli quod ſcio alii in animali parem, defendit nervoſiſſimam tracheæ tunicam, & facilitando inter reſpirandum ejuſdem motui nexus annulorum lubricat: Quando autem quantitate excedit ſponte ſua juxta glaberrimas præcipites

pites vias cadens, ductus aſperæ obſtruendo impedit admiſſionem aeris per minimos receſſus pulmonum, hinc tuſſim & alia ſed leviora mala producet. Aſt craſſa admodum ſputa cum exſcreantur, glandularum percolantium vel partis percolatæ vitium cogitare eſt: Prius facile per adjuncta diſcernitur ut glandularum abſceſſum, inflammationem, tumorem & ſimilia; alias autem humor incidendus, attenuandus & deniq; foras propellendus erit. Quo tempore tenuiora apparent, ſanguinis minorem cohæſionem percipientes glutinoſioribus utendum ſcient. Colorum quam mira hic varietas! Viridia & ſimul valde tenacia acerbis confuſam bilem ideo hactenus concludo, quia mixta felli acerba virorem creant quia acerba gluten inducunt, quia tuto & jucundé & ſat cito acerbis adverſa, id eſt acria volatilia hunc affectum curant, tam interne, quam externe applicata. Flava: abundantem bilem hic exoneratam, glandularum vel liquorum putredinem cogita, quia nullum præter bilem in corpore liquor flavus, & major his ægris in gutture ardor, & cura per acida incidentia ſed fracta ſulphureis egregia fit. Si pure, ſanguine vel ſanie ſordent, facile prudens diſcernit, mali develabit latebras; hinc depurando,

ſol-

ſolidandoq; vulnus curam aget medicus. Si ſalſa, & tenacia; muriaticum ſal limo implexum tam obvolvendo opiatis ſpicula, quam incidendo per volatilia corrigendum foret. Dein horum aqua hydroſtaticè pondus majorem minoremve partium dabit craſſitiem. Solutio eorum in diverſis liquoribus chemicis expedita, optimam tandem & efficaciorem medelam contra infeſtos Batavis morbos donabit, quod magni in re medica momenti concedit, qui aſperæ arteriæ periculoſiſſimos morbos noverit. Impoſitio horum prunis ardentibus multa docet, ut notum ex HIPPOCRATE. Aphor. iv. 47. vii. 69.

Neque ex his de *Narium* recremento, *Muco*, dicenda difficulter lector concludet.

Ex *lachrymali* tandem *oculi puncto*, *glandulis ſtenonianis* aliiſq; hinc inde per oculi orbitam diſperſis & hærentibus in palpebrarum corpore tranſudans *liquor ſubſalſo-oleagineus*, Adnatam oculi & exteriorem tunicam humectando ab aeris defendit injuriis, motui & decori inſervit: hic vero peccans variè ſolo fere guſtu innoteſcit, varios miſeros, & fere intolerandos morbos creat; non minus deplorandam ſæpe ab Empiricis uno ad omnes morbos utentibus medicamento, uno caſu quod prodeſt, curationem trahit

hit ſecum : Quum tamen jucunda horum ſanatio procedat, ſi explorata guſtu lympha, quæ tum uberius corrupta profluit, corrigitur, uti nuper in diverſis egregio cum ſucceſſu factum novi. Supereſſent, mi lector, dicenda innumera, ſed hic imponam multas ob cauſas finem.

COM-

COMMENTARIOLUS

De Familia, Studiis, Vitæ curſu, &c.

PROPRIA

BOERHAAVII

MANU conſcriptus,
Et poſt obitum inter ejuſdem MSS. repertus.

SECT. I.

ERat HERMANNI Genitor Latinè, Græcè, Hebraicè ſciens: peritus valde hiſtoriarum & gentium. Vir apertus, candidus, ſimplex: Paterfamilias optimus amore, cura, diligentia, frugalitate, prudentia.

Qui non magna in re, ſed plenus virtutis, novem liberis educandis exemplum præbuit ſingulare, quid exacta parſimonia polleat, & frugalitas.

II.

Novercæ mores ſanctiſſimos, raram virtutem, amabilem indolem admirari par eſt. Eam æquabili inter omnes *liberos* amore diſpertito tanquam propriam Genitricem *diligebant Omnes.*

Defunctam anno 1702 deflebat, nihilque acerbius dolebat, quam quod tantis meritis respondere, dignamque vicem reddere non potuerit. Summa semper ope nixus, fratribus, sororibusq; ex ea prognatis, beneficentiam maternam utcunq; repensare.

III.

Ipse genitor Latinæ Græcæq; linguæ *elementa tenello adhuc* ad præceptaVossiana *instillare*, Erasmi colloquia, & Terentii fabulas *explicare in se suscepit*. Novi Testamenti lectioni,& explicationi, adjiciebat Historiæ universalis *conspectum,quem* Christiani Matthiæ theatrum *pandit*. Undecennis *noster* omnibus hisce commode uti posset solus, ad regulas grammatices utrâque in lingua promptus; nec minus Belgica Latinè, quam Latina Belgicè vertere gnarus: quin libros, qui in origines verborum inquirunt, atque interiora vocum sensa exponunt, scitule intelligens.

IV.

Circa duodecimum ætatis annum corripuit Nostrum Ulcus malignum, quod femur lævum depascens, medicinam & chirurgiam pertinaciter eludebat. Morbo, remediisq; simul di-

vexato

vexato, & diris doloribus confecto *Ipse* sale & lotio *partem* fovendo *tandem evicit malum. Adjectum a nostro*, se hac occasione proprio dolore coactum, primum de Studio Medicinæ cogitare cæpisse.

V.

Et jam Academiam ingredi potuisset, mense *Feb.* 1683. nisi ob debilitatem femoris *præoptasset* aliud semestre sub fructuosa Wynschotani *disciplina* contineri.

VI.

Triglandius benevolentiam *ei conciliavit* generosam, constantem & paternam DANIELIS VAN ALPHEN; *horum consilio dedit se disciplinæ* SENGUERDII, ex quo Dialectica, Metaphysica, Physica, usum Globorum & Politica arripuit; Quinquies *propterea ab hoc præside* in Cathedram Academicam productus.

VII.

Matheseos utilitatem necessitatemque persentiens ei leviter se dedit, *Anno* 1687. *mox* dulcedine prolectante per Geometrica, Trigonometrica, eorumque praxin properavit ad Algebram; quæ mirifice ingenio ejus placebat,

Synthesin geometricam veterum admirans maxime, & excolens, ad augendam vim Intelligentiæ; Analysin Recentiorum ad usum nova inveniendi. *Anno* 1690 Philosophiæ *laureâ insigniendus*, disputationem inauguralem habuit de distinctione mentis à Corpore.

VIII.

Illustrationes Antiquitatum Hebraicarum ex TRIGLANDIO, & historiam ecclesiasticam ex SPANHEMIO *avidus combibit.*

IX.

Jungebat his exercitiis quotidianam Patrum lectionem secundum chronologiam, à CLEMENTE ROMANO exorsus, & juxta seriem seculorum descendens, ut JESU CHRISTI doctrinam in N. T. traditam, primis Patribus interpretantibus addisceret. Horum simplicitatem sinceræ doctrinæ, disciplinæ sanctitatem, vitæ DEO dicatæ integritatem adorabat; subtilitatem scholarum Divina postmodum inquinasse dolebat. Aegerrime tulit, sacrorum interpretationem ex sectis sophistarum peti; & PLATONIS, ARISTOTELIS, THOMÆ AQUINATIS, SCOTI; suoque tempore CARTESII, cogitata Metaphysica

physica adhiberi pro legibus, ad quas castigarentur sacrorum scriptorum de DEO sententiæ. Experiebatur acerba dissidia, ingeniorumq; subtilissimorum acerrima certamina, odia, ambitiones, inde cieri, foveri; adeo contraria paci cum DEO & homine. Nihil hic magis illi obstabat, quam quod omnes asserant sacram scripturam ἀνθρωποπαθῶς loquentem θεοπρεπῶς explicandam; & θεοπρέπειαν singuli definiant ex placitis suæ metaphysices. Horrebat inde dominantis sectæ prævalentem opinionem Orthodoxiæ modum, & regulas, unice dare juxta dictata Metaphysicorum non sacrarum literarum; unde tam variæ sententiæ de doctrina simplicissima.

X.

Mathematica lectissimis juvenibus tradidit.

XI.

Est forsan incredibile nullum *a Nostro* medicinæ auditum professorem, nisi CL. DRELINCURTIUM paucis vicibus paulo ante fata.

VESALIUM FALLOPPIUM BARTHOLINUM versat, corpora brutorum crebro quoque incidit; interfuit etiam publicis CL. NUCKII in theatro dissectionibus sedulus.

XII.

Veterum medicorum lectionem aggreditur, ſecundum temporum, quibus vixere, ſeriem, initio facto ab HIPPOCRATE; cito deprehendit *poſteriores* omnia bona ſua HIPPOCRATI debere; in hoc ſolo ergo diu ſubſtitit, hunc legendo, excerpendo, digerendo. *Recentiores percurrens* ſtetit in SYDENHAMO, quem pluries, ſemper avidius, excuſſit.

XIII.

Chemiam dies noctesque exercuit;

XIV.

In Botanicis, ope Floræ Hermannianæ, quem tamen ipſum non audivit, *inſignes cepit progreſſus*; ſtirpium luſtrationi in horto academico *crebros in agros excurſus adjungens*.

XV.

His autem abſolutis (*nam interim* urgebat Theologica) prius voluit Medicinæ Doctor creari. Dein cogitabat legitimè ambire facultatem concionandi, pro impetranda ſtatione Eccleſiaſtica, *& animo ſedebat* orationem habere in academia,

demia, *in qua disquireret*, cur olim ab indoctis tam numerosi, hodie a doctissimis tam pauci Christiani facti sunt. *Disputatio ad gradum interea in medicina capiendum Harderovici habita est* de utilitate explorandorum excrementorum in Ægris, ut signorum.

XVI.

E Gelrica academia Leydam reverso accidit insonti, nec opinanti, aliquid, unde prævidebat impedimenta ambituro Cathedram Ecclesiasticam.

XVII.

Lautis conditionibus, lautioribus promissis, invitatus, *plus vice simplici*, a viro primariæ dignationis, qui gratia flagrantissima florebat regis GULIELMI III. ut Hagam comitum *sedem caperet fortunarum*, declinavit constans. Contentus videlicet vita libera, remota a turbis, studiisque porro percolendis unice impensa, ubi non cogeretur alia dicere & simulare, alia sentire & dissimulare: affectuum studiis rapi, regi. Sic tum vita erat, ægros visere, mox domi in Musæo se condere, officinam Vulcaniam exercere, omnes medicinæ partes acerrime persequi. Mathematica etiam aliis tradere. Sacra legere,

& auctores qui profitentur docere rationem certam amandi DEUM.

XVIII.

Doctrinam ſacris literis Hebraice & Græce traditam, ſolam animæ ſalutarem & agnovit, & ſenſit. Omni opportunitate profitebatur diſciplinam, quam JESUS CHRISTUS ore & vita expreſſit, unice tranquillitatem dare menti. Semperque dixit amicis, pacem animi haud reperiundam niſi in magno MOSIS præcepto de ſincero amore DEI & hominis, bene obſervato. Neque extra ſacra monumenta uſpiam inveniri, quod mentem ſerenet. DEUM pius adoravit, qui eſt. Intelligere de DEO unice volebat id, quod DEUS de ſe intelligit. Eo contentus ultra nihil requiſivit, ne idololatria erraret. In voluntate DEI ſic requieſcebat, ut illius nullam omnino rationem indagandam putaret. Hanc unice ſupremam omnium legem eſſe contendebat, deliberata conſtantia perfectiſſime colendam. De aliis & ſe ipſo ita ſentiebat: ut quoties criminis reos ad pœnas lethales damnatos audiret, ſemper cogitaret, ſæpe diceret; Quis dixerit, an non me ſint meliores? Utique ſi ipſe melior

id

id non mihi auctori tribuendum esse palam aio, confiteor; sed ita largienti Deo.

XIX.

Triplex morbus atrociſſimus in eum incubuit. Primus medio Auguſto 1722 *ſævire occæpit, quum ut ſermo academicus denarrat,* Lecti tepore relaxata corporis ſpiramenta antelucano frigori, & penetrabili irrigui roris humori, exponens, vitam fere perdidit, in ſe incurioſus committens, quæ ut cum cura caverent, aliis fideliter inculcarat. *Inde* ARTHRITIDIS exquiſitiſſimæ tormentis diſcruciatus, tandem jacuit reſolutus, ut vix amplius ſenſus ullus, nullus utique motus inferioribus artubus ſupereſſet.

Quum jam eatenus remiſiſſet, ut medicinam pati & audire velle videretur, ſuccos preſſos bibit *noſter* herbarum cichoræi, endiviæ, fumariæ, naſturtii aquatici, veronicæ aquaticæ latifoliæ copiâ ingenti: ſimul deglutiens abundantiſſime gummi ferulaceæ Aſiatica.

XX.

Præludia ultimi mali ingruerunt medio ferme Anno 1737. *quum* perſentiſcere *cæpit* tardantis moleſtias anhelitus lento gradu increſcentes. *Acceſſere Anno* 1738. inſolitæ arteriarum pulſationes

tiones in dextra parte colli, & nunquam ante obſervatæ micationes perturbatæ in arteriis. Hanc perpendens, credidit ſubnaſci inter cor & pulmones obſtacula motui vitali polypoſa, cum dilatatione vaſorum.

XXI.

Poſt peractos labores, equitationis exercitio ſe dabat: ab eo prohibitus ægritudine cruris ſiniſtri & cruoris de renibus ructu, pedes ſe exercebat.

XXII.

Feſſus teſtudinis concentu ſolabatur laſſitudinem; Muſices amantiſſimus.

XXIII.

Teſtatum voluit gratulari ſe *Academiæ* fundatiſſimas res, opeſque cum aliis in facultatibus, tum in medicina ſuſtinenda, atque ſumma cum dignitate ad egregium publicum propaganda. Hanc certe Quadrigæ Virorum, in artibus ÆSCULAPIIS abſque controverſiâ principum, innixam, cum ſplendorem, tum celebritatem qua floreat, haud dubie tuituram. Non eſſe proinde, quod, hoc quidem rerum ſtatu, alia fulcra atque præſidia ſapientiæ medi-

cæ

cæ circumſpiciantur; quam quibus nunc ornata ſit, atq; ſubcincta, CLARISS. OOSTERDYKIO certe, annis ſibi & laboribus pari, cum profundiſſima ſcientia conſummatiſſimam, ac plane incomparabilem, experientiam conſtare. Celeberrimos item, ALBINUM, ROYENIUM, GAUBIUM, æſtimatiſſimos olim Diſcipulos, dein Collegas, commendationem excellentiſſimæ cum indolis, tum doctrinæ, non impleſſe ſolum, ſed, conſentiente omnium judicio, applauſuque, exſuperaſſe. Sub tantis hiſce præſidibus, ſcholam HIPPOCRATICAM perpetua ſibi & incrementa, & ornamenta, poſſe promittere: quæ terras nunc ad juſſa Omnipotentis relicturus, ſtationeque deceſſurus, ipſe quoque firmiſſima cogitatione lætus præcipere, pioque in Academiam adfectu, & ore, præcinere auderet.

XXIV.

XXIV.

EX EPISTOLIS

Nondum editis

ANALECTA

1. & 2. De noviſſima Cl. Defuncti Valetudine verſantur.

I.

Illuſtri Baroni BASSAND, Magn. Duc. Hetruriæ MED. H. B. S. P. D. Mart. 16. 1738. N. S.

ME prehendit vomica in Pulmone, ſpiritum præfocans ad leviſſimos corporis motus, a tribus abhinc menſibus quotidie increſcens. Si cauſa augetur, opprimet, ſi vero rumpitur eventus incertus. Quicquid fiet, id omne continget ex arbitrio ſuperioris Numinis. Cur ergo metuam, quid cupiam aliud! Adoremus DEUM! ſufficit. Interim curo ſedulo ut lectiſſima adhibeam remedia, ut leniam & maturem, ſecurus de exitu. Vixi ultra 68 annos, ſemperque lætus.

Cl. Mor-

C. MORTIMER, M. D. R. S. Secr. H. B.

Sept. 8. 1738.

2. Æger animo & corpore ex violentiſſimo morbo & diuturno vix ſane ſpirabam, dum decumbenti traduntur literæ, quas ad me dediſti Londini idibus Auguſti. Harum argumentum deliciis atq; officioſiſſimis refertum honorum verbis ita me refecit atq; recreavit, ut calamo te ſalutare in animum induxerim, vel ea quidem gratia potiſſimum, ut teſtificarer, quanti faciam amicitiam atq; benevolentiam, quâ parum meritum honoras. Novum tibi nomen ſum, dum mihi inſcribis volumen doctum & laborioſum * *Actorum ſocietatis*; gratias ago pro eo, quas poſſum maximas, proq; honorifico benefacto obſtrictum memet profiteor.

Ætas, labor, corporiſque opima pinguitudo, effecerant, ante annum, ut inertibus refertum, grave, hebes, plenitudine turgens corpus, anhelum ad motus minimos, cum ſenſu ſuffocationis, pulſu mirifice anomalo, ineptum evaderet ad ullum motum. Urgebat præcipue ſubſiſtens prorſus, & intercepta, reſpiratio ad prima ſomni initia: unde ſomnus prorſus prohibebatur, cum formidabili ſtrangulationis moleſtia. Hinc hydrops pedum, crurum, femorum,

* Vol. 39.

rum, ſcroti, præputii, & abdominis. Quæ tamen omnia ſublata. Sed dolor manet in abdomine cum anxietate ſumma, anhelitu ſuffocante, & debilitate incredibili: ſomno pauco, eoque vago, per ſomnia turbatiſſimo. Animus vero rebus agendis impar. Cum his luctor feſſus, nec emergo: patienter expectans DEI juſſa, quibus reſigno data; quæ ſola amo, & honoro unice.

Julii 12. 1733.

3. Redux ex Britanniis illuſtris BASSANDUS mihi tradidit librum de variolis [auctore T. LOBB, M. D.] quem perlegi, probaviq; nam plenum vidi veræ ſcientiæ medicæ, promittentemque genti humanæ bona plurima, gratias ideo ſummas miſſo pro Munere ago tibi, Autorique. * Veniam petenti des, quæſo te, quod debitum diu reſponſum diſtuli; vix horula datur otii ſeneſcenti, & morienti invitos inter labores. Sed quid queror ineptus? qui interea loci alios labores quæro, in perveſtigandis metallorum proprietatibuspunctum ſi vacabit, brevi quid perſcribam ad

* Sept. 21. 1733. Si placet, poterit egregius Lobbius evulgare ſic, ut in literis meis ad te habetur, ſententiam quam veri amor expreſſit.

ad *ſocietatem* de miris dotibus argenti vivi per laborioſiſſima experimenta explorati; unde equidem conſtabit, quod *alchemiſtæ* vere dixerint de eo, licet minus Latine, quod *ſubjectum ſit omnis mirabilitatis non creaverit Altiſſimus, mirabile magis in natura rerum.*

Unicum eſt, quo animum laxo arte ſevera diſtentum, *Arboretum* ſcilicet, in quo colendo & amplificando totus inſanio. Si hiſce meis nugis velles favere, læta mihi ſane pareres gaudia. * * * poſſum quippe Americanas frutices & arbores præſertim noſtro ſubmittere cœlo; quare tanto eaſdem avidius cupiebam plantas.

Feb. 18. 1734.

4. Pro Rogerſiano munere gratias ago. Doleo eximium virum, mea cauſa, jacturam feciſſe boni otii in refutando viro, qui minus æque meos conatus tractavit, quos tamen invito extortos vi nec ipſe magni facio. Si ſcirem me cauſam dediſſe cenſori, pœniteret me, rogarem veniam.

En obſervata laborioſiſſima de Mercurio. Si ea tanti putas, poſtquam perlegeris, ut non prorſus indigna ſint, quæ legantur ſocietatis illuſtriſſimæ membris; oro te velis ea ipſis offerre a me, unàque ipſis deferre teſtificationem obſequii, quo

quo viros ſummos proſequor, & venerationis, qua ipſos colere ſemper affectabo.

April 8. 1734.

5. Gaudeo redditas tibi meas literas, una cum obſervationibus de Argento vivo. Imprimis quia non diſplicuere ſocietati regiæ, quæ arbitra eſt, & domina ut curet, ſi tanti putet, inſerendas actis ſuis: ubi umbra ſua nitorem pulchrius micantibus conciliare poterunt. Summi noſtra tempeſtate Chemici dictaverunt Argentum vivum, ope ſinceri ignis, mutari in metalla ad ignem conſtantia: hinc fuere auctores aliis, ut bonum otium, curas ſuas, & opes impenderint huic operi. His obtuli ſententiam meam experimentis nixam certis, nec ulla neceſſitate repetendis per alios: quia fideliter enarravi, ut revocarem ab opere ſupervacaneo, temporis jactura & errore in ſcientia. Unum id mihi in hiſce propoſitum; ſufficit ſi obtinui, ſed ſimul ſtudui aſſerere veritatem dicto Gebri ſolventis gratias Altiſſimo, qui creavit argentum vivum adeo ſimplex, ut ſemper & ubiq; idem, vel totum ab igne fugiat aut integrum in eo conſtet, nec in diverſa dividi patiens; modo ſincerum fuerit. Cæterum non metuendum, quod laborem ſophiæ temerè revelabo profanis, nam

ne

ne ipſe quidem myſteriis initiatus ſum, longe minus adeptus. Si vero poſſum manifeſtare quam certiſſime quinam labores falſo commendentur, id non alienum ab homine bono puto, idq; faciam ſedulò. Id etiam ægre fero, quod Veteres Auctores explodant ignari, dum re monſtro Ipſos paucis, planis verbis dixiſſe, quod ego per annos productis rerum experimentis didici verum eſſe. Illos igitur prudens eximer numero vanorum, qui rudiſſimi omnium rerum ſcribillant de difficillimis, elementa prima ignorantes: Quæ magis laborioſa in metallicis expertus ſum, deſtinavi Academiæ regiæ ſcientiarum, ut prima illuſtriſſimæ ſocietati Britannicæ venerabundus obtuli.

Martii 3. 1737.

6. * Quod diu debui, ſolvo nomen: quippe mitto tibi deſcriptionem laboris, quem vix expectes, niſi ab eo, qui inſanienti ſapientiæ devotus erat. Sed ſacra hæc aliter non conſtant, tantæq; molis eximere præjudicatas opiniones, & cautos facere alienis periculis, ne operam perdant, & oleum, nimis creduli. Tu optime, perlege intentus; ſi haud prorſus indigna habes, prælege ſapientibus Britannis, imo & actis

* Hæc Epiſtola tertiæ experimentorum de *Mercurio* partis comes erat.

inſere. Si difficiles putant nugas, id tamen laudabunt, quod alios meis impenſis dedoceam, quæ ſummi in arte principes nimis confidenter tradunt.

Maii 10. 1737.

7. De ſcriptoribus *chemicis* videris mea quidem ſententia ſapienter judicare. In rerum experimentis apertè, ſimulando aut diſſimulando nihil; ſimpliciter, nulla circuitione uſus enarro res, & rerum eventa: neque temere quid immiſces, quod non pertinent ad propoſitum; neque colligere inde volo quidpiam, niſi quod effectu patet. Contingit ergo, ut neminem labor meus offendere queat, licet forte præconceptæ opinioni pugnet. Si quis vero ſapientior in arte, atque in opere fortunatior, alia adhibendo pulchriora detexit, illi mea non oppono; ſed cautus affero, ſi gradu ignis memorato argentum vivum ſic tractavit, tum utraq; non mutata manere, neq; ab eo igne, neq; a reciproca inter ſe virtute alicui quid pati. Moneo amicè, ne ergo a talibus expectant promiſſa. Argentum vivum ebulliens calorem ab igne habet, qui ei tribui ab igne poteſt maximum, ſi quid novi; Ille vero adhibetur, dum a metallis puriſſimis exhalare cogitur. Inſtitui alia, dum jactata lenocinia, quibus acutus hydrargyrus putatur exen-

terare

terare metalla, examinavi, & inveni prorſus eandem ſimplicitatem. Hæc, ſi proferam, miraberis pertinaciam improbi laboris, & videbis everſam ſpem alchemiſtarum primi ordinis, cæſaribus, regibus, principibus faſtuoſe deprædicatam, caro venditam; ſed obruor negotiis, neq; tamen unquam fugio amabilem inſaniam.

Novembre le 12. 1728.

L' extrait d'une lettre de Mr BOERHAAVE *envoye a ſa Majeſté Portugaiſe, qui l'avoit fait demander par ſon Embaſſadeur a la Haye Don* LOUIS *d'Acbuna.*

Touchant la Racine NINDSIN.

La Racine *Nindſin* au *Nindzing*, croit originellement en *Corea* en *Japon*, de la longeur de trois ou quatre doits, & de l'epaiſſeur d'un doit: elle ſe feud preſque toujours en deux vers embas.

Quand cette Racine eſt entiere, blonchâtre, tiraut, tant ſoit peu, vers le Jaune, preſque pellucide, d'une conſiſtence un peu dure & reſineuſe, elle eſt le meillure.

La proprieté, & la vertu de cette Racine eſt tenue ſi excellente cher les Chinois, & Japannois, qu'il y a une loy publique de ne la jamais falſifier, & qu'on place des gardes militaires dans toutes lis avenues au temps de la recolte.

Sa vertu principale eſt d'augmenter l'eſprit vital, conforter le cerveau, le coeur, & les nerfs, de repaner ceux, qui ſe ſont epuiſes par la debauche, & principalement de prolonger la vie & de l'entratenir en vigeur & en ſantè ; c'eſt pourquoy ils les preferent avant tous les cordiaux du monde.

L'on prend une dragme de la Racine, qu'on coupe par le meun, on vers la deſſus trois onces d'eau d'ecorces de citron, on les caiſſe mitonner enſemble pendant la nuit dans un vaiſſeau de porcelaine bien ferme, que rein n'exhale ſans eboulir ; au matin, on le boit une heure avant que de ſe lever, une fois a la ſemaine.

CATA.

CATALOGUS OPERUM *Hermanni Boerhaavii* GENUINORUM.

Numerus libelli noſtri paginam indicat, qua mentio ſinguli Operis habetur.

Diſputat. Academ.

Oratio Academica, [*quo probabatur*] bene intellectam a Cicerone, [*& confutatam eſſe*] ſententiam Epicuri de ſummo bono.

Diſputatio inauguralis de diſtinctione mentis a corpore. *Lugd. Bat. 1690. 4to.*

Diſputatio medica inauguralis de utilitate explorandorum in ægris excrementorum, ut ſignorum. Harderovici, 1693. *p.* 187

1 ORATIO de commendando Studio Hippocratico. An. 1701. *p.* 23--27

2 —— de Uſu Ratiocinii mechanici in Medicina. 1703. 28--31

3 —— qua repurgatæ Medicinæ facilis aſſeritur ſimplicitas. 1709. 31--84

4 —— de comparando Certo in Phyſicis. 1715 34—81.

5 —— de Chemia ſuos errores expurgante. 1718. 37—40

6 —— de Vita & Obitu Cl. Bernardi Albini. 1721, 40—43

7 —— quam habuit, quum, honeſta miſſione impetrata, Botanicam & Chemicam Profeſſionem publice poneret. 1729 44.

8 ——de

8 — de honore Medici, ſervitute. 1731. 44-45.
Inſtitutiones Medicæ in Uſus annuæ exercitationis domeſticæ. 8vo. *Ed.* 1. 1708.
—— 5. & ult. *Ley.* 1734. *p.* 109—112
Aphoriſmi de Cognoſcendis & Curandis Morbis, in uſum Doctrinæ domeſticæ, 8vo. *Ed.* 1. 1709. *Ed.* 5 & ult. 1734. *p.* 112—120
Index Plantarum in Horto Lugd. Bat. repert. 8vo. 1710. *p.* 123
Libellus de Materie Medica, & Remediorum Formulis quæ ſerviunt Aphoriſmis, &c. 8vo. *Ed.* 1. 1719. ult. 1740. *p.* 120—123
Index alter Plantarum quæ in Horto Lugd. Bat. aluntur, 2 Vol. 4to. 1720, 1727. *p.* 123-128
Epiſtola ad Ruyſchium de fabrica Glandularum in corpore humano 1722. *p.* 129.
Atrocis, nec deſcripti prius, Morbi Hiſtoria, ſecundum Medicæ Artis leges conſcripta, 8vo. 1724. *p.* 130
Atrocis rariſſimiq; Morbi Hiſtoria altera, 8vo. 1728. *p.* 131
Præfatio Vaillantii Botanico Pariſienſi, cum Vita Auctoris, *folio.* 1727.
Tractatus Medicus de Lue Aphrodiſiaca, præfixus Aphrodiſiaco, edito 1728.
—— tres de Mercurio, Actis Brittanicis & Gallicis editi, vide acta Brittan. No. 430, 443, 444. *p.* 149—156
Cura conjuncta Albini Præfatio Veſalii operibus, continens præclari hujus Anatomici Vitam, 1725. *p.* 130
De præfationibus & editionibus auctoris noſtri cæteris, vide ſupra. *p.* 132, 160, 161.
Elementa Chemiæ, 2 Vol. 4to. 1732. *p.* 132-146

Opera

Opera Spuria.

SUB nomine *Boerhaavii* edita, ſed quæ ſummus ille vir adeo non agnovit, quod indignanter tanquam famæ ſuæ injurioſa repudiaverit, Vide ſupra. *p.* 166

Methodus ſtudendi Medicinam, 8*vo.* *Anglicè.* 1719. 12*mo.* *Lat.* 1726, 1734. *p.* 164

De Viribus Medicamentorum, 8*vo.* *Angl.* 1720. *Lat.* 1723, 1727. *p.* 165

Inſtitutiones & Experimenta Chemiæ, 2 Vol. 8*vo.* *Lat.* 1724. 4*to.* *Angl.* 1725. *p.* 148

Hiſtoria Plantarum cum Characteribus & Virtutibus, 2 Vol. 8*vo.* *Lat.* 1727. *p.* 128

Praxis Medica, ſive Commentarium in Aphoriſmos de cognoſcendis & curandis Morbis 5 Vol. 8*vo.* *Lat.* 1728. *p.* 118, 119

Poſt obitum Cl. viri prodierunt

1 HERM. BOERHAAVE Prælectiones Academicæ in proprias Inſtitutiones Rei Medicæ, edidit & notas addidit Albertus Haller, vol. 1. Chylificatio, vol. 2. 1740. 8*vo.* 1739. vol. 3. 1742. *p.* 118

2 A Treatiſe on the Powers of Medicine, tranſlated from the moſt correct *Lat.* Edition, by *John Martin*, F. R. S. 8*vo.* 1740. *p.* 166

Prælectio de Calculo, 1740. *p.* 168

Gerardi van *Swieten*, M. D. Commentaria, in *Herm. Boerhaave* Aphoriſmos. *Tom.* I. 4*to.* 1742. *p.* 119

Tituli prælectionum publicarum tradente.

HERM. BOERHAAVE, ab Anno 1709, ad 1738, ex ſeriebus lectionum in Academia Lugd. Bat. editis, deſumpti.

1709.

1709. Tempore æſtivo, in Horto Herbas indicando explicabit, Hyberno ſtructuram Plantarum docebit. *Id. quotannis præſtitit.*

1710. Hyberno, methodum diſcendæ medicinæ demonſtrabit.

1711, 1712. Actiones Remediorum exponet. *Unde liber de Viribus medicamentorum.* ducet.

1713. Auditum exponet.

1714. Viſum exponet, & de in ortum hominis. Hoc anno a conſulibus creatus præſes Collegii chirurgici, proinde Noſocomio publico ſtudioſos in morborum dignotione per ſua ſigna, cognitione per ſuas cauſas, & curatione per ſua indicata exercebit, & ad praxin reducet.

1715. Reſpirationem exponet auditorio medico.

1718, 1719. Leget de Igne.
1720, 1721. Leget de Aere.
1722. Leget de Aqua.
} De hiſce ac de Terra & Menſtruis chemicis lectiones publicas edidit in Element. Chem. Vol. 1.

1723. Chemica hora nona in Laboratorio Chemico tradit.

1724, 1725, 1726, 1727, 1728. Idem proponit.

1729. De Calculis homine dicet.

1730, 1731, 1732, 1733, 1734, 1735. De Morbis Nervorum dicet.

1736, 1737. De Cordis actione dicet.

1738. De Sanguine dicet.

FINIS.

AN ACCOUNT OF THE LIFE OF Dr *H. BOERHAAVE.*

PART I.

SECT. I.

Of his Birth and Education.

THE principal inducements to record the lives of thoſe, who by their diſtinguiſh'd merit have done honour to mankind, are either to reflect that honour on their memory, or to excite poſterity to a noble emulation: Biography is not more laudable in the former view, than uſeful in

the latter, when converſant about perſons indiſputably poſſeſs'd of extraordinary endowments ſtudiouſly exerted for the benefit of ſociety.

From hiſtory it appears, that ever ſince the riſe of the Athenian commonwealth, the ſciences have flouriſhed moſt in ſtates free from deſpotic ſway, eſpecially in republics; of this, although the United Provinces are ſo conſiderable an inſtance, yet among the many renowned for their learning and labours, which that country has produced, from ERASMUS to the preſent time, it may be difficult to mention one more univerſally celebrated than Dr H. BOERHAAVE, late profeſſor of phyſic in the univerſity of Leyden.

For whoſe birth, leſt cities contend hereafter, as they might with equal reaſon, as formerly about the ſages of antiquity; 'tis obſerveable, that the village of Voorhout, which juſtly claims it, was before inconſiderable, otherwiſe than for its neighbourhood to Leyden, being but two miles diſtant from the Harlem-gate of this city.